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TAKE FIVE – STAY ALIVE

The Development and Implementation of a Classroom-Based Driver Education Programme for Adolescents

A thesis

submitted in fulfilment

of

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By

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Abstract

This study was an outcome from a head on collision involving the researcher, which resulted in the death of an adolescent motorcyclist. It describes the development, implementation and evaluation of an original driver education programme, *TAKE FIVE-STAY ALIVE*, which was designed to increase the awareness of safety for secondary school students aged between 15 and 17 years. The programme was implemented in two secondary schools and involved four driver education classes: two during each July-September semester of 1996 and 1997. The focus on classroom implementation was influenced by a lack of research reporting what happens when a driver education (DE) programme is implemented in a classroom. The principal aim for students was to raise awareness in them of factors contributing to collisions because adolescents have maintained the highest levels of death and injury of any group in New Zealand in recent years.

Driver education research to date, which has mainly relied on positivist research methods and has focussed on summative outcomes, often confirmed minimal long-term safety advantage for groups receiving training. This study departed from a purely quantitative approach and, instead, used formative assessments and analyses of qualitative and quantitative data to improve programme effectiveness as it was being implemented.

Using a multi-faceted, inductive and naturalistic approach, the longitudinal study uses a teacher-as-researcher model of action research. Reported in narrative form, several small action research cycles were evaluated and incorporated within three larger cycles of action research. Action research provided a systematic approach for the management of the research as a whole and for monitoring student progress.

There were several units of analysis operating within each implementation: the process of developing and implementing a DE programme, the observation, reflection and planning of teaching and learning activities, and a narrative account of the research as a whole from the researcher's perspective of being a lone action researcher, programme developer, driver education teacher and researcher.

Findings highlighted the need to avoid making assumptions about the homogeneity of students and their preparedness to accept, without question, safety ideas from a DE programme or a teacher. Instead it was important to take account of

the diversity of adolescents, their individual learning needs and preferred learning styles. Where possible students were encouraged to contribute to programme development through diary entries, discussion and feedback about teaching, programme content and learning outcomes. The researcher was also able to broaden his teaching skills and improve the quality of teaching and learning for many students.

This research found that increasing student awareness of safety through a classroom-based driver education programme is largely dependent on a teacher using formative and summative assessments within the practice of teaching and learning so that tasks and activities could be adjusted to better enable students to make progress.

Finally, this research emphasises that driver educators cannot assume that designing a programme will in itself ensure effective results. It is what happens in the classroom that determines any programme's impact on students, their ideas and behaviour.

Preface

Within the last decade, vehicles in New Zealand have become cheaper, more plentiful and more powerful. With the age of licensing still set at 15 years and the legal drinking age lowered to 18 years, a potentially lethal mix of speed and youthful vigour contributes to an exciting environment for adolescents who continue to be the most vulnerable group of road users. While regulations in New Zealand for a Graduated Driver Licensing System and mandatory carriage of licence have been designed to improve road user behaviour and provide protection for all road-users, there are individuals who are prepared to contravene such regulations. Often there is no serious outcome, but all too often personal trauma and injuries occur for the perpetrators, and more outrageously, for innocent road users who become caught up in impossible situations that eventuate.

One such event, involving a young teenage boy of 15 years, became the trigger for this research. In 1993 I was involved in a head-on collision with a motorcyclist and his pillion passenger who had been cutting corners on a gravel road. At the point of impact the pair were on the wrong side of the road and the motorcyclist died a week later in hospital. As a father and foster parent to four teenage girls, a secondary school teacher and educational adviser at the time, I sought answers to questions like why did it have to happen and what can be done to reduce the likelihood of similar occurrences happening in the future for other teenagers.

The sadness about such events is that lives of those directly and indirectly implicated are changed forever. For travellers, confidence can be replaced by apprehension. For family members, the holes, left by the premature death of a loved one, or the serious injury that results in losses to the quality of life are devastating. For a nation, the high social, emotional and economic costs cause stress and strain on the population at large.

This research focussed on increasing the effectiveness of a classroom-based driver education programme for a group of adolescents. Education has the potential to play an important role in improving the practice of driving but it has not been particularly successful at arresting dangerous behaviours because of the number of variables that can be negative influences on road user behaviour. From personal experience I can attest that a crash-free past is not a guarantee for a crash-free future and that a serious crash remains a possibility for all road users. However, it is a hope

of mine that insights from this research might provide an incentive and encouragement to others to continue seeking new ways to improve the effectiveness of educational measures for adolescents inside and beyond the classroom.

To Ngaromate Williams: Your death was premature, but it has not been in vain. This thesis and the work that has grown from it draws attention to unnecessary risks taken on roads that can end in road fatalities. Your death from an Easter weekend head-on collision in 1993 has touched the lives of many. It has given me a pathway to follow for over five years. Following on from our collision, up to seventy students have been involved in driver education lessons in 1996 and 1997, and the *TAKE FIVE* driver education programme has been developed. The programme assisted students the same age as you to learn about human fallibility and other factors associated with the driving task. We are now all a little wiser as a result.

To Tim Beale, as an enthusiast for driver education in School A, your sudden illness and death by natural causes was a tremendous shock following the second implementation. I pay tribute to your unstinting support during the implementation of the *TAKE FIVE* programme in your school in 1996 and 1997.

To Kate and Judy S., Sonya D. and Susan, and Jacqueline B.: As innocent victims of road trauma, you took the courage to accept my invitations to relive the horror of the collisions you were involved in, which resulted in you sustaining serious life-threatening and long-term injuries. I am indebted to you for your strength of character in describing the realities of your experiences for students. You have been able to present what few others can describe in such a way that moved students to express horror of the impact and effects which your stories had on them. To Sonya, your eventual and untimely death on September 25, 1999 from injuries sustained in the crash was a shock to us all. You fought and survived a traumatic ordeal for two and a half years and helped to make the world a better place. Only you and your family knew of the personal suffering involved but you helped us learn from your experience.

This thesis is dedicated to each of you and my immediate family, who are precious survivors each able to tell their stories for the benefit of others.

Acknowledgements

A project of this nature that spans over five years does not reach a conclusion without the support of a number of other people. I pay tribute to you who have nudged, urged, encouraged, and supported me through difficult times when little progress seemed to occur. Your collective assistance as friends, supervisors, sponsors, and family has been the principal reason for me being able to complete this work.

As a part of this network of support, I acknowledge, in particular, the professional assistance of my supervisors Dr Clive McGee and Dr Neil Haigh who have regularly challenged and nurtured me to clarify and structure my thoughts to capture and describe important incidents and processes more lucidly in the teaching of driver education. I do appreciate the hours of time and effort that you have given to this work. I also express sincere appreciation to Pip Bruce-Ferguson, Tim Smithells, Hugh Barr and Barry Parsonson for responding positively to my requests for professional guidance as you proofed the manuscripts in recent months.

I am indebted to former Land Transport Safety Authority Manager of Education and Community Programmes, Bill Robertson for financial sponsorship and professional support he provided. His assistance and encouragement at a critical time became the catalyst for launching the research. In the time since, I have appreciated contact with LTSA personnel Rachel McLaren, Colleen Slagter, Michael Cummins, Wayne Perkins and Vanessa Masoe at the information centre.

I pay tribute to the driver education teachers Shirley McKay (Hamilton), Don Edwards (Hamilton) and Lynette Hynds (Tauranga) and thank them for the chance to share time with them and their students. I gained important insights into classroom practice in their schools. One of the special teachers in this field was Tim Beale who taught driver education in School A for over 20 years. He embraced this study enthusiastically and attended all but a few lessons, professionally supporting me as a colleague and showing his unique patience and tolerance. His untimely death was a tragedy to all and sadly, as a result, I have been unable to share this report with him. My appreciation is also extended to Keith McKenzie who as the driver education teacher in School B also provided support and assistance by allowing me to teach two of his classes in 1996 and 1997. The four classes of students in both schools were vital for this research and I appreciated the chance to work alongside the students as I

did each lesson. I learned much from this opportunity, which I hope will be as helpful to others as it was for my personal professional development.

To conclude, I am indebted most of all to my wife Kathleen for being patient, efficient and a real strength for me at all times and for so many years. I include with this, special thanks to my daughters Keri-Lee, Shelley, and Lauren and niece Tannia for their tolerance and patience over the last few years. I do apologise for the encroachment the study has taken on family time on occasions, but without this support it would not have been finished.

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Abbreviations

ABC - Antecedents, Behaviour and Consequences
ACC - Accident Rehabilitation and Compensation Insurance Corporation
AR - Action Research
DE - Driver Education
DET - Driver Education Teacher
DET: A Driver Education Teacher: (A=School; B=School B)
ERO - Educational Review Office
EWRC - Environment Waikato Regional Council
GDLS - Graduated Driver Licensing System
LTSA - Land Transport Safety Authority
MOE - Ministry of Education
MOTO - Ministry of Transportation Ontario
OECD - Organisation for Economic Development
PACTS - Parliamentary Advisory Council for Transport Safety
PDE Text – Pre-Driver Education Text
Q1a - Questionnaire Implementation 1 (a = first; b = second; c = third)
Q2a - Questionnaire Implementation 2 (a = first; b = second; c = third; d = fourth)
RA – Reality Activation
RD: A - Researcher Diary: (A=School A; B=School B)
RTA - Roads and Traffic Authority
RTSRC - Road Traffic Safety Research Council
RTI - Road Traffic Instructor
SES - Socio-Economic Status
TAR - Teacher Action Research
T/R - Teacher as Researcher

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Chapter 1 : Overview

1.1. Road safety contexts

1.1.1. Introduction

This study was motivated by my personal experience of a fatal head-on collision with an unlicensed 15-year-old motorcyclist and his pillion passenger in 1993. Nothing in my previous driving experience prepared me for the mental and emotional trauma from this event in which personal safety, the safety of loved ones and vulnerability were called into question. The crash stemmed from a 15 year-old adolescent's disregard of legal regulations and traffic safety guidelines. This incident prompted me to explore the implications of such events, particularly for adolescents, their future safety on the road and for the benefit of road users in general.

Prior to this study, I had spent 23 years variously employed as a secondary school teacher and school education adviser in urban and rural areas. I had not taught driver education (DE) as a curriculum subject specifically but had retained what has been a lifetime interest in driving and driving-related matters. My range of traffic experience had included time as a heavy truck driver, a school bus driver, a commuter and some years riding motorcycles. In addition, I had accumulated experience as both driver and passenger in more than 40 countries between 1973-5 while on an overseas working holiday. For personal recreation, transport and touring I had also used cycles and a tandem in Britain, Holland and New Zealand. These experiences were mostly enjoyable.

However, the impact of a head-on crash for me was significant. As a father of four teenage daughters and an education adviser at the time, I was concerned about the long-term implications of road trauma, not only for my immediate family, who were all directly involved, but also for the safety of adolescents and the wider public in general.

Adolescents, defined by Midland Health as young adults between 15 and 19 years of age (Midland Health, 1996), were initially targeted for the study as a consequence of this crash. My subsequent checking of international injury and fatality statistics revealed that New Zealand rates of death and serious injury for 15-24 year olds per 100,000 population, were some of the highest in the world (LTSA, 1994b; LTSA, 1995b; LTSA, 1996; LTSA, 1997b). New Zealand's comparative ranking based on deaths by age group and percentage of deaths per age group ranged between 18th and 22nd out of 24 Organisation for Economic Co-operation and Development (OECD) countries between 1993 and 1996. I noted also that New Zealand 15-24 year-olds consistently had the highest levels of death and serious injury of any age group in 17 out of the 24 countries

(LTSA, 1996; Whines, 1988). Such statistics have been widely regarded as unacceptably high (di Pietro, & MacKenzie, 1994) and have often been the motivation behind DE programme development in New Zealand and worldwide (Organisation for Economic Co-operation and Development [OECD], 1986).

These points were salient; adolescents were consistently over-represented in crash statistics and their over-representation was maintained in spite of educational countermeasures designed to reduce risk-taking in traffic. The youth who died in the crash I was involved in was a representative of an age group whose rates of injury and death from traffic related events have been the highest of any age group in New Zealand for many years (LTSA, 1995b; LTSA, 1996). Reasons why adolescents are similarly over-represented in most OECD countries (Evans, 1991; Mayhew & Simpson, 1990; LTSA, 1996; Parliamentary Advisory Council for Transport Safety [PACTS], 1991) are explored in the next chapter.

I questioned what educational measures might be taken to improve the safety of adolescents. *Education* is frequently identified as a means of counteracting levels of road trauma, namely injuries and deaths resulting from traffic crashes or reducing accident involvement of target groups in question ("Education plan needed," 1995; OECD; 1986). However, my initial review of research into road safety education programmes suggested that they had not been particularly effective in lowering the levels of road trauma overseas (Horneman, 1993; Job & Hatfield, 1996; Roads and Traffic Authority, [RTA], 1994c). In New Zealand, in spite of the implementation of DE programmes and restricted licensing regulations limiting night driving and peer influence within a Graduated Driver Licensing System [GDLS], adolescent statistics for road trauma remained a concern.

Thus, I was prompted to take a much closer look at *road safety* and *driver education* policies and practices and the associated research literature. In addition, I examined characteristics of adolescents and possible reasons for their continuing over-representation in crash statistics. Following a survey of various DE programmes, I planned to develop an alternative DE programme and evaluate its impact on a group of adolescents to ascertain what curriculum design and teacher-learning strategies might be effective for them.

1.2. Road Safety Education.

A number of terms are used to embrace the concept of educating people for safety on the roads or in traffic. Harwood, Cummins and Fischer (1994) describe effective *road-user education* as education that "develops the knowledge, skills, attitudes and values to enable safe travel as pedestrians, cyclists, motorcycle riders and passengers" (1994, p. 2). However, a number of other authors have noted inconsistent definitions of

safety education terminology in driver education programmes (Best & Edwards, 1982a; Grigg 1995, 1996a; Horneman, 1993; Langford, 1997). To clarify the "confusion caused by terminology" (Best & Edwards, 1982a, p. 14) Best and Edwards considered the broad area of *road safety* "as a *product*, or in other words, a (safety) learning outcome" (p. 55). They describe *Traffic Education* more as a *process* that refers to "the learning experiences to which a student is exposed i.e. what you do when you present a learning unit in the classroom"(p. 55). They also acknowledged that traffic education had a broader scope that included "an aspect of the socialisation process, increasing individual awareness of social responsibilities" (p. 15).

A goal (product) related to road safety education specified by OECD authors at the time was "to reduce the accident involvement of the target groups in question" (OECD, 1986, p. 5). However, the results from most road safety programmes have not shown crash reductions at anticipated levels (Glad, 1988; Job & Hatfield, 1996; Lund, Williams & Zador, 1986; Ohlson & Stoke, 1986; Stock, Weaver, Ray, Brink, & Sadof, 1983). I could locate no country that had ceased to provide funding for classroom-based DE programmes because they were not successful, but found that funding for some programmes had been reduced in Australia, the United States and Norway (RTA, 1994c) due to a lack of measurable success. As a result of this type of outcome Job and Hatfield (1996) tentatively proposed abandoning DE. However, Simeon (1979) acknowledged that "any education of the young [had] value" (p. C4/1) and given the high levels of adolescent road trauma, Job and Hatfield conceded that expenditure (investment) which is "as effective as possible...[was likely to be] the only realistic strategy" (p. 11) against adolescent ignorance. The public continued to have "faith in education as an effective countermeasure to road trauma" (Job & Hatfield, 1996, p. 11).

1.2.1. Driver Education

In terms of this study, the focus of traffic safety education for adolescents in many countries has been firmly centred on the development of driver skills and experience. I noted confusion about driver-related terms that frequently applied to school-based safety education programmes: *driver training*, *driver education* and *pre-driver education.* Inconsistencies in the use of safety education terms caused problems with reporting, and created difficulties for differentiating one type of programme from another. *Driver training* was a term most often applied to practical driving courses held beyond the school classroom on a one-to-one basis. *Pre-driver education* classes were more often found in some states in the USA and countries where the age of licensing was 18 years and beyond. *Pre-driver education* acknowledged that most students had not attained driving licences at the time the education programme was offered.

Driver education (DE) as a generic term has a number of possible translations such as *learning to drive, what you needed to accomplish to gain a motor vehicle licence, what you needed to know about the traffic environment to be safe on the road.* Key factors most often associated with the term were its classroom focus, its focus on theoretical rather than practical activities and its attention to driving and licensing matters. According to Fisher (in Simeon, 1979) such programmes of DE primarily dealt with "developing correct attitudes towards the driving task, knowledge of the legal interpretation of the traffic regulations, basic knowledge of vehicle purchase, insurance, maintenance and operation" (p. C4/8). It also assisted with the ability to recognise, analyse and respond to traffic situations.

Use of the term DE in New Zealand acknowledged the factors specified by Fisher and it was the term most frequently associated with secondary school classroom-based traffic education programmes at the time. The term recognised a pedagogical process of assistance for students to develop safety skills, knowledge, attitudes and values for use in traffic. It acknowledged that students were either prospective learner drivers or novice drivers who needed to become partners in the learning process. It was for these reasons that I chose to use the term *Driver Education* (DE) within the study. My observations of students in DE classes confirmed that up to half of the students held a licence at some level. The 15 year-old minimum eligibility has remained in New Zealand in spite of recommendations that it be raised to 17 years (LTSA, 1997a).

1.2.2. Rationale for classroom-based DE programmes

The rationale for classroom-based DE programmes targeting adolescents acknowledged their comparative over-involvement in traffic statistics. School and traffic authorities recognised that much traffic safety learning should occur in the school environment as it was the last formal opportunity for students to gain such information (Blair, 1993; Gibb, 1979; Toomath, 1979). School-based programmes had the potential to provide for a greater consistency in student knowledge about driving (OECD, 1994a) and adolescents could "learn road craft skill more easily, [they were] faster in their reactions, and [they were, prior to 1999] some years away from the legal drinking age" (LTSA, 1995a, p. 10). According to OECD authors, school-based programmes had the potential to provide for a greater consistency of information about driving (OECD, 1994a).

I concurred with the idea that road trauma of any kind represented a serious public health problem for any country (Grigg, 1996b; Harwood, Cummins, & Fischer, 1994). In view of the search for answers about programme effectiveness (Horneman, 1993; Rothengatter, 1994), it was timely to explore other approaches to see what effect classroom-based activities could have on adolescents' perceptions of safety and risk.

According to Simeon (1979), a philosophical base for driver education was to "assist the road user to understand the physical, social, legal, psychological and moral factors that influence an individual's behaviour in the traffic environment" (p. C4/6).

1.2.3. Who has responsibility for road safety?

In New Zealand, strategies for a National Road Safety Plan have been organised under four main categories:

- Safer People and Operators
- Safer Roads and Rail
- Safer Vehicles
- Safety Management (LTSA, 1995b), or Safety Systems (Environment Waikato Regional Council, 1993).

Through the 1993 Land Transport Act, the Minister of Transport delegated the primary responsibility for road safety in New Zealand to the LTSA to "undertake activities that promote safety in land transport at reasonable cost" (LTSA, 1995c, p. 52). Using figures for 1995, principal partners funded to assist in this delivery were the New Zealand Police ($136 million), Transit New Zealand ($104 million), and the LTSA, ($18 million). The LTSA used its share of the funding to provide "education and information, safety regulation and audit, and road safety policy advice" (LTSA, 1995c, p. 57).

In the local Waikato region specifically, the Environment Waikato Regional Council (EWRC) acknowledged a community responsibility for road safety "not aimed at repeating the national programme but identifying the programmes for the region" (EWRC, 1993, p. 12). Partnerships were sought for a coordinated approach involving the three partners mentioned and "community groups within the Districts, the Districts within the Region and coordination of regional and national efforts" (p. 16). The EWRC highlighted the need for a commitment to objectives and targets of the region's safety strategy which then needed to be "filtered down to the personal driver, cyclist, pedestrian level through the manifestation of a safety culture" (p. 16).

Some important points were noted.

- Targeted education programmes for *young drivers* and *adolescents* were given a high priority within the *Safer People* category (EWRC, 1993, Appendix 1, p. 3; LTSA, 1994b, p. 42).
- DE was not as significant in the school curriculum for students in most secondary schools because of timetabling constraints, which limited the numbers of students who could take it.
- Where DE was available, it was frequently not compulsory and targeted *lifeskills* for transition education students along with career studies, drug and alcohol education and time management and study skills modules.

Of importance for this study was the need for a strategic plan for driver education for young drivers, as the 15-24 year old group "feature in 38 percent of all road

accidents" (EWRC, 1993, Appendix 1, p. 3). The plan was not one that was directly linked to schools although one regional target was to make "*Drive Plan*, available to all secondary schools" (EWRC, 1993, Appendix 1, p. 3). In practice, however, it was up to each secondary school to establish a DE programme for students and to purchase DE resources for use in their school. While such resources used to be distributed free to schools by respective Government departments, newly contracted programme developers now argued that schools would appreciate DE resources more if they had to pay for them in line with contestability and user-pays philosophies. While there was major funding available for three Government authorities for road safety, it was not directly available for schools and their programmes. The school had to budget for programmes and resources from their operational grants.

1.2.4. Effectiveness of DE

The outcomes from DE research programmes overseas (Best & Edwards, 1982a; Council, Roper, & Sadof, 1975; Horneman, 1993; Job, 1995; Lund, et al., 1986; Stock, et al., 1983) have demonstrated that few significant differences in accident rates or violations have been found between trained groups and untrained groups. Trained groups often showed lower accident and violation figures in the first six months, but over the long-term, road safety benefits from driver education programmes were generally described as negligible (Horneman, 1993; Job, 1995).

Of particular concern for safety were research studies that showed some driver training or education interventions were responsible for increasing death and injury, because they encouraged earlier licensing and more drivers, in the highest-risk years, to be on the road (National Committee for Injury Prevention Control, 1989). As a consequence because of the "very inconclusive answers regarding effectiveness" (Trinca, et al. 1988, in Road Traffic Safety Research Council [RTSRC], 1994, p. 11), the New Zealand RTSRC favoured support for road safety programmes that would "focus on driver improvement rather than increasing exposure (to traffic)" (RTSRC, 1994, p. 11). Improving adolescents' knowledge, skills and attitudes to DE without increasing exposure to danger was fundamental to this study, along with the identification of pedagogical strategies that could improve classroom teaching-learning.

1.2.5. Existing road safety research literature

It is surprising, given the level of youth over-involvement in road trauma, that few studies have reported on the teaching-learning processes in classroom-based DE programmes and the need to relate DE to specific learning outcomes. Rothengatter (1994) noted that "there is a surprising lack of empirical evidence with regard to instructional effectiveness...[meaning that an] understanding of the relative usefulness

of educational process is seriously hampered by the lack of studies in this area" (p. 91). Hornemann (1993) noted that the value of DE programmes has not been made clear, which has been due, in part, to a lack of clarity in describing realistic student *behavioural objectives* and detailing what *teacher strategies* would be the most effective for them. Horneman also supported Saffron's (1981) contention that teaching strategies in DE courses were often deficient and some programmes were likely to continue to exhibit similar deficiencies.

Most of the research reports I located were concerned about programme effectiveness from a summative (final outcome) perspective, and whether quantitative outcomes such as crash reduction levels could be measured. There was seldom any mention of whether formative assessment of educational processes in DE had safety value for students or what pedagogical strategies could be the most effective for them.

Gibb (1979) in New Zealand expressed the need for more exploratory research into the area of DE but the only comprehensively documented school-based intervention that I could locate prior to 1996 was the *New Zealand Driver Education Investigation Project* (Best & Edwards, 1982a). Its primary goals were to explore how MOT traffic education programmes could be included within the current curriculum; to identify specific skills, attitudes and needs of adolescents at age 15 and to modify or reinforce pre-licensing skills and attitudes. Goals were not aimed at reducing adolescent traffic statistics. Although further educational research was a recommendation made by the authors, traffic authorities declined to extend the research into other schools and school-based programmes. Overall, DE research focused mainly on summative outcomes and the development of *programme content*. There was neglect of pedagogical factors that were critical within the classroom and how these factors might impinge on the teaching process. It was difficult from the lack of research into classroom DE programmes to determine what activities might be suitable for students and what ideas about safety student feedback might convey.

1.2.6. Summary of the problem

A general aim of DE programmes is the reduction of accident involvement in adolescents (OECD, 1986). When examined closely, the outcomes from DE programmes have not been associated with reductions in crash levels at the levels anticipated. Even if such a relationship existed, it would be difficult to determine the weighting of the contribution a programme might make to a reduction. There are many factors that may contribute and which are likely to interact in complex ways. The lack of reported success, therefore, prompted me to consider other criteria that might be used to assess the impact of a programme. In DE research reported to date, few evaluations have

been made of the responses of students to such programmes and the actual learning outcomes. In particular, few research investigations have explored:

- How students react to a DE curriculum for use in a classroom;
- What learning outcomes are possible from a classroom-based DE programme;
- What teaching-learning methods contribute to the achievement of these outcomes;
- How effectiveness of a DE programme might be measured.

Two concerns were paramount. Limited research had been done on the processes of teaching and learning associated with the implementation of DE programmes in classrooms, and from a practitioner's perspective, it was not clear from research reports what factors contributed to the programme effectiveness. In spite of the difficulty of making direct links between DE programmes and the lowering of crash rates, I believed that it should be possible to involve high-risk students in activities that could lead to learning outcomes that might result in changes in attitudes towards safety. Therefore, I decided to:

1. Identify relevant, realistic learning outcomes for a DE programme for a target group of adolescents;
2. Plan learning activities and experiences that could be used to achieve those outcomes; and
3. Develop teaching methods that would assist students to achieve those outcomes.

In addition, I decided on a research paradigm, methodology and methods that could allow me to: review tasks within existing DE resources; develop and refine activities and teaching strategies in the classroom to optimise the quality of the teaching-learning experience; and determine what factors contributed to programme effectiveness for adolescents.

Five research questions were formulated as a basis for the study:

1. What knowledge, skills and attitudes are necessary for adolescents to be safe on the road?
2. What features of being an adolescent need to be considered for a DE programme?
3. What learning theories and associated teaching methods can assist in the development and implementation of a DE programme?
4. What teacher attributes are important for the delivery of DE in the classroom?
5. What factors contribute to the effectiveness of a road safety programme?

1.3. Contexts and focus

Adolescents from the 15 - 19 year old age group were targeted in this study, for the reasons noted previously. Secondary school contexts were chosen because of the ease of access to students who were taking DE as a curriculum subject. The long-term goals I envisaged for this study needed to complement DE programmes that were already in operation in local secondary schools. The research needed to operate within

existing school lesson times so that minimal disruption occurred for school management, DE programmes, and for students themselves.

1.3.1. Student needs and educational process

Next I began to focus attention on the needs of students, what they could accomplish and how a teacher could best assist them to learn. I made visits to three DE classes as a part of my early reconnaissance to observe students in action. I noted some worrying patterns of behaviour and attitudes. A number of students dismissed the need to have a driving licence in order to drive. My personal experience had shown that such logic was faulty. The adolescent in the crash I was involved with was no longer alive to tell his version of the same story. Therefore, I designed an anonymous, scoping questionnaire for students in a DE class (see Appendix A) to find out: what proportion of students in the DE class had driven a vehicle on the road without a licence; whether the practice was widespread amongst their peers and others; and whether other patterns could be found in the sample of students. Because I had been invited by a road safety coordinator to visit a first year psychology class at the university at the same time, I asked permission to use the same survey with these students as well. Once permission had been granted, I administered this questionnaire to both the secondary school DE class (School A) and the first-year university psychology students in March 1996. A co-educational school sample of 20 DE students from School A were mainly 15 years old (16 males, 4 females) and the university sample contained 17 students, with 10 being under 20 years and the balance being between the ages of 22 years and 48 years (11 females, 6 males).

The results (Appendix A) showed that *no* adult or adolescent university psychology student reported having driven without a driving licence. In the targeted high school 7 out of 20 students claimed to have driven on roads without a licence and a further third knew of others who were unlicensed drivers, sometimes members of their immediate families. Other features of the overall responses were:

- A higher proportion of those reporting driving without licences were Maori students;
- Asian students in both contexts referred to a licence as a means of avoiding being caught by the police rather than a means of improving traffic safety.

Those in the school group who had driven without licences were all male: five out of the seven were Maori (in a class with fewer that 50 percent Maori), one was Asian and one was not ethnically identified.

The responses from this interim survey, appeared to support a notion that the higher the level of academic attainment or educational aspiration of the students, the greater the likelihood of compliance with driver licence regulations. The implications for

this study were that the students taking DE, as transition education students (described more fully in the next chapter), revealed lower levels of compliance than tertiary students and half of them reported that the licence had no real value for them or was "just a piece of paper" (sample student comment). By contrast, each university student reported in some way that a licence represented a minimum level of safety had been reached.

It was also not clear from the DE research I had located what tasks or activities students found easy, difficult, interesting, boring or were important for safety. My exploration of these points would need to include the perspectives of the teacher and students as they worked together. A survey of DE programmes at the time, described in the next chapter, showed that most contained sound educational ideas and information. However, I could locate only one explicit reference to a theory of learning as a basis for the development or delivery of activities in a DE programme, which is discussed in the next chapter. There was a serious lack of research that investigated students' interactions with DE curriculum materials. As a consequence, this study had the potential of making an original contribution by addressing these issues.

1.4. Methodology: Action-research

Most DE research I located adhered to a positivist paradigm (Bassey, 1999) and employed predominantly quantitative methods of data collection and analysis. It used control and experimental groups to measure progress according to normative task analyses and specifying desired or *ideal* behaviour (OECD, 1986, p. 18) that could be generalised to other populations. I planned a different approach in this study to focus more on a range of qualitative data (questionnaire, observation, and personal diaries) and some quantitative data and to explore how teaching and learning effectiveness might be improved and assessed from the perspectives of a teacher and students. Qualitative data would allow me as the teacher to obtain feedback from students as the study proceeded.

Action research (AR) is particularly suited to socially based research in authentic contexts. According to Zuber-Skerritt (1995), AR as a "basically bottom-up or improvement led approach" (p. 15) exists as a pragmatic means of pursuing change in social situations, for testing accountability, for encouraging critical awareness, for self-evaluating and doing research into teaching practice. In this study, AR would also allow me to operate in a dual role as both a teacher and a researcher ("participant-observer", variously described as "teacher as researcher", Burns, 1995; Fosnot, 1989; Maxwell 1996; Olson, 1990; and "observer as participant," Merriam, 1988). I was especially interested as a teacher-practitioner at involving the students to work collegially with ideas and activities concerning safety, as is consistent with an AR approach.

Rather than focussing solely on a summative evaluation of a programme, AR would also allow me to explore formative assessment of learning processes, learning

activities and teaching methods to assist students acquire new learning. I could respond in different ways depending on student interactions. I sought ways not only to improve my practice as a teacher but also to raise the threshold of learning for students. Therefore, I could act and react as the teacher while being involved in the process of educating. In this way new ideas could be developed and simultaneously reviewed by me as an active participant within the programme, even though some phenomena were not "fully detailed in advance" (Bunning, 1995, p. 8). More detailed aspects of AR relevant to this study are given in Chapter Four.

1.5. Reporting: The narrative

I considered the use of *narrative* to report the research as it unfolded. Considerable support for reporting individual differences arising from within contextual groups is found in qualitative research relating to the *teacher as researcher.* Such support gives credence to multiple, and equally valid perspectives existing together from the perspective of the participant and observer (viz. "participant observer," Gans, 1982; "teacher as researcher" Olson, 1990; Maxwell, 1996; "observer as participant," Merriam, 1988). Being at the centre of the research and the means by which the research is completed, I could address the subjectivity of a dual role, the need to be reflexive in outlook and acknowledge the inextricable links between the researcher and the phenomena being studied (Maxwell, 1996). In practical terms, the narrative could allow me to record my perspective, as both researcher and teacher, as "the basis for the story" (Glesne & Peshkin, 1992, in Maxwell, p. 28). It would not only assist me to guard against "unreflective practice" (Alcorn 1986, p. 35) by allowing me to reflect on and review alternative ideas, methods and approaches, but it would also provide a vicarious learning opportunity for DE teachers and researchers alike. The use of experiential data, including my own technical knowledge and personal experiences, could be acknowledged as valid contributions towards addressing the problem.

The narrative, which has recently "gained much wider theoretical and philosophical support" (Maxwell, 1996, p. 28) could report my identity and experience. The narrative would also recognise my role as the primary research instrument through which data would be explored, viewed, mediated, and explained (Merriam, 1988). Paths I followed could be recounted so that I could refine my practice as a teacher. I could describe links between educational theory and practice, as I designed and modified learning experiences for students. Readers would likely gain insights into how ideas were visited and revisited through reflection, and how assumptions might need to be reviewed throughout the implementation process. In addition, use of the narrative in this study would provide readers with a sequential report of the development of a DE

programme, its implementation and evaluation over two implementations covering two years in two secondary school classroom contexts.

1.6. Scope of the study

The scope of this study is limited to the development, implementation and evaluation of a DE programme for adolescent students. It is a case study set in two secondary schools, implemented during the July-September semester in 1996 with a repeat of the programme in 1997.

The study sought to provide a unique view of the educational processes I would be involved with as a DE teacher and researcher. Instead of focusing on generalisation to a wide area, I would design a local classroom-based study of the development, implementation and evaluation of an alternative programme of DE for adolescents. Such a study could address the lack of empirical evidence about instructional effectiveness (Rothengatter, 1994) and could identify realistic student behavioural objectives and teacher strategies (Horneman, 1993) that could be the most effective for adolescents.

I was keen to develop a flexible approach to research that could incorporate the manner in which pupils challenge ways of doing things that cause teachers to modify "classroom management strategies and routines" (Poskitt, 1995, p. 12) as part of the research. This was in contrast to the implication behind an OECD (1986) suggestion that "if an entirely new programme is to be developed, small-scale, fairly strictly controlled experiments should form the basis of programme development" (1986, p. 16). I believed that DE students needed to become involved in the research to test the efficacy of the tasks and activities in a DE programme.

In addition, I wished to encourage students to contribute to the development of DE programme and take ownership for crash over-involvement through the use of AR. Within a narrative emerging from authentic practice, AR could take account of contributing variables not necessarily obvious or defined ahead of time.

I was also keen as a *teacher as researcher* to explore the use of AR as a means by which a lone researcher could be involved simultaneously with action and reflection on action. This would include ways I could critique elements within the programme where no collaborative partner existed which is often the case when a teacher wishes to research his or her own practice. More details are given about this in Chapter Four.

DE programmes are mostly targeted at a general adolescent population. In doing so, subgroups of a population, especially lower achieving students, are often ignored. I realised, by considering the results from the pre-intervention survey reported earlier, that DE programmes in secondary schools also needed to take account of lower achieving students. Little, if anything, is known about the impact of DE programmes upon a

subgroup of students. While the OECD (1986) notes that "groups are often very heterogeneous and this can influence the evaluation results to a large extent" (p. 18) few studies have elaborated on what implications there are from this for DE. These issues are explored in more detail in Chapter Two.

Finally, I planned to cover new ground in DE research by focussing on classroom pedagogy, incorporating the development and trialing of an original DE programme and highlighting factors seldom reported in DE research: what DE students were capable of achieving; what constraints existed for the teacher and students; and how these constraints could be managed. I would then be better informed about the processes of teaching and learning and what *effectiveness* could mean for learners and the teacher.

1.7. Outline

In this chapter I provided reasons for narrowing the focus to the development, implementation and evaluation of a DE programme for secondary school students. In Chapter Two, I explore definitions of educational terms and a range of traffic safety programmes available, including variables that influence effectiveness and related areas of learning theory. Five research questions are confirmed as a guide for exploration in the study. I explore theory behind curriculum development in Chapter Three, as it relates to the development of an alternative DE programme, *TAKE FIVE.* I provide an overview of a proposed DE curriculum, which includes its initial structure, teaching strategies and learning activities. In Chapter Four I introduce the methodology and research design and describe how AR is used to provide a structure for inquiry, across a multi-case design. I explain my use of narrative to preserve and reflect on the sequential flow of events and "to tell the story" (Hitchcock & Hughes, 1995, p. 328) of contexts, participants, methods of data collection and analysis.

In Chapter Five I begin a narrative exploration of the first of three cycles of AR and include my early assumptions about teaching and learning. In Chapter Six I conclude exploration of the first implementation and student results. I follow this with suggestions for improvements for the next implementation. I report the second implementation of the programme in Chapter Seven examining what contributed to effectiveness. In Chapter Eight, I discuss outcomes with reference to each research question and consider programme effectiveness from the adolescents' perspectives.

In Chapter Nine, I outline the conclusions I reached and consider strengths and weaknesses of my use of action research and the narrative to report the study. I follow this by outlining contributions the research makes to the field of DE and make suggestions for DE in the future and further research. A list of references used in the research precedes a range of appendices.

Chapter 2 : Literature

2.1. Introduction

I pointed out in Chapter One that quantifiable links between DE and improved road safety have not been established. The failure of DE evaluations to show "substantial safety benefits" (Job 1995, p. 5) and the difficulties in measuring effectiveness (Lourens, 1993; Milne, 1994; OECD, 1986) were concerns exacerbated by a lack of research into the processes and outcomes involved in the implementation of classroom DE programmes.

In particular, I noted several factors. There was a lack of empirical evidence into instructional effectiveness and a lack of understanding of the relative usefulness of educational process (Rothengatter, 1994). There was a lack of systematic road safety training and rigorous evaluation of road safety programmes (Lonero et al., 1995) and it was not clear what was taught and how it was taught (Drummond, 1989; Townsend, 1990). Specific links between outcomes and education programmes were hard to confirm (Kirkwood, 1988; Simeon, 1979) and Horneman (1993) had noted that there was "a general naivety about driver education and that researchers and practitioners [needed] to start from the beginning to research educational process involved in teaching people to be safe" (p. iv).

I consulted the literature for suggestions and became aware of another concern; a lack of clarity or consistency regarding the use of educational terminology (Best & Edwards, 1982a; Grigg, 1995; Grigg, 1996a). Therefore, the literature reviewed in this chapter focuses firstly on determining a clear understanding of educational terminology, and secondly on issues arising from the five research questions introduced in Chapter One.

2.2. Educational terminology

It is necessary to be consistent in the use of educational terminology if effective teaching and learning outcomes are to be defined and educational concepts and processes are to be accurately described (Drummond, 1989; Mayhew & Simpson, 1990; Townsend, 1990). If researchers and authorities use different words to refer to equivalent concepts then defining realistic outcomes and comparing DE programmes becomes problematic.

I reviewed educational terms used by three authorities in particular: the OECD (1986), the Ministry of Education (MOE)(1994a) and the RTA (1997). Equivalent educational terms are shown in Figure 2.1.

Problem	Aims/Goals	Teacher Role	Educational Process	Learner	Source
Educational Deficit	Educational Goals	Teaching Objectives	Enabling Objectives	Educational Objectives	OECD (1986)
	Achievement Aim	Achievement Objectives	Learning Activities	Learning Objectives	MOE (1994b)
	Aim	Teaching Topics		Behavioural Objectives	RTA (1997)

Figure 2. 1 Equivalent educational terms in use

I found difficulties arose from inconsistent or ambiguous terminology such as *educational objectives* (Ministry of Transportation Ontario [MOTO], 1995) and *behavioural objectives* (Horneman, 1993) and whether they were equivalent terms. The term *behavioural objective* (Horneman, 1993, Milne, 1994) is ambiguous in the sense that it can convey two perspectives: (a) behaviours that trainees are expected to exhibit following course completion, which is a teacher planning perspective (i.e. *teaching objectives*; *achievement objectives; teaching topics*) or (b) behaviours *achieved* by learners as outcomes which is a student achievement perspective. While a teacher perspective may be similar to a student perspective in content and description, the teacher's perspective is a statement of "expected learning" (MOE, 1994b, p.15) which provides "a framework for teaching, learning and assessment" (MOE, 1997, p.16). The student's perspective represents achievement levels that have been or are capable of being, attained. The differences relate to expectation and achievement. A teacher can teach to a specified objective, but the learner's capacity to achieve that objective is dependent on variables that can influence achievement or non-achievement of the outcome. Such variables may include the intellectual capacity or attitude of the student, including preferred learning styles, and a range of ethnic, social, educational, home and environmental pressures that can cumulatively dissuade or encourage learning. *Learning outcomes* need to be achievable.

An additional confusion stemmed from whether the concepts under scrutiny were viewed as an educational *product* or *process* or whether assessments of achievement were *summative* as a product or *formative* as both product and process. Such terminological confusion is inextricably linked to programme effectiveness and

depends on whose perspective judgements about effectiveness are to be made. I noted student perspectives were seldom reported in research literature nor were students encouraged to contribute to programme development.

As indicated at the beginning of the chapter, the lack of research into the implementation of DE programmes has contributed to this confusion because little exploration of *educational processes* has been undertaken in order for terminology to be clarified, for learning outcomes to be confirmed and for effectiveness to be assessed.

2.2.1. Definition of educational terms

To achieve clarity in my use of educational terminology in this research, I favoured the use of the term *learning outcomes* as an equivalent term for *behavioural objectives,* because the word *objective* can be frequently aligned with both teacher and student perspectives and thereby cause unnecessary confusion. The terms I used are outlined in Figure 2.2.

Problem	Aim/Goals	Teacher Role	Educational Process	Learner
Student needs	Aim and Curriculum Goals	Teaching Objectives	Teaching Strategies Learning Activities	Learning Outcomes

Figure 2. 2. Preferred educational terms for use in the study

An educational *aim* is formulated to address needs that students are believed to have. Through planning a course of action to meet an *aim,* a teacher selects *curriculum goals* on which various *teaching objectives* are based. *Teaching objectives* are concrete objectives, which state what is to be learned in a programme of teaching and learning. Through the careful selection of *teaching strategies* and *learning activities* a learner is given assistance to achieve a number of *learning outcomes.* In most cases, evidence of *learning outcomes* is a confirmation that the teacher has taught successfully, the learner has learnt successfully and the course materials have been appropriate for the level of the student.

2.2.2. The study and its purpose revisited

The effectiveness of DE has been called into question by a number of researchers (Job, 1995; Job & Hatfield, 1996; Lourens, 1993, Page, McDonald & Ryba, 1992a). I found that there was:

- A lack of knowledge about realistic learning outcomes which could be achieved by students from a classroom-based DE programme;
- A problem in defining effectiveness if educational terminology was not clearly understood or used consistently;
- A limited appreciation of the teaching and learning processes involved in DE and what strategies were likely to improve effectiveness of classroom DE programmes; and
- A lack of feedback from students about DE programmes and how activities were received by them and whether positive benefits existed for them.

Some authors (Horneman, 1993; Kirkwood, 1992; Lonero et al., 1995; MOTO, 1995; Rothengatter, 1994) suggested that there needed to be a comprehensive *reinvention* of DE, which provided an opportunity for me to become directly involved as a teacher and researcher. As a teacher I would design and monitor a DE programme. As a researcher I would explore pedagogical issues contributing to effective teaching and learning. I saw a need to describe the classroom processes that might lead to the achievement of realistic learning outcomes by students and the roles a teacher might play to support the aim of increased safety awareness. Biddulph and Biddulph (1997) mentioned that "excluding teachers from the development process is a serious mistake... each teacher *is* a curriculum developer" (p. 2). They maintained that a critical scrutiny of a curriculum should be undertaken on a regular basis. It would "(i) expose any evidence of ideological capture; (ii) ensure that it remains dynamic, (iii) determine whether it reflects the latest educational and other insights, and (iv) examine whether it meets the needs of children and teachers" (Biddulph & Biddulph, 1997, p. 2). A focus on classroom processes seemed to me to have the potential to break new ground in what is known about how students react to a DE programme.

The five research questions listed in Chapter One focus first on curriculum design, involving appropriate teaching objectives, programme content, teaching strategies and learning activities, and secondly on effective educational processes and classroom practices. From a curriculum development perspective, I would explore:

1) What knowledge, skills and attitudes are necessary for adolescents to be safe on the road?
2) What features of being an adolescent need to be considered in a DE programme?
3) What learning theories and associated teaching methods can assist in the development and implementation of a DE programme?

In addition to these questions, to study educational processes and practices, I would explore:

5) What factors contribute to the effectiveness of a road safety programme for students?

To address these concerns, I turned to appropriate literature for answers and suggestions.

2.3. Research Question 1: What knowledge, skills and attitudes were necessary for adolescents to be safe on the road?

In the context of this study, being *safe on the road* means to be free from danger or the risk of danger in the present and being aware of how to maintain safety for the benefit of self and others in the future. Traffic roles addressed in this study are principally those where adolescents are novice drivers or passengers in vehicles, although all other road-user roles were necessary to consider.

I reviewed eighteen road safety programmes, DE research reports, campaign evaluation reports, and road safety articles that I had access to. DE programmes were obtained from Australia and New Zealand, research reports were sourced from Australia, New Zealand, Canada, and from several OECD countries (see Appendix B). I reviewed them critically, taking into account the frequency of references to each educational factor to identify *knowledge*, *skills* and *attitudes* required for safety. I combined this information with personal knowledge and experiences as a foundation for developing an alternative DE programme. To generate categories for the survey, I acknowledged a statement by Harwood et al. (1994) who specified that "effective road user education develops the knowledge, skills, attitudes and values to enable safe travel as pedestrians, cyclists, motorcycle riders and passengers" (p. 2). I used *skills*, *knowledge* and *attitudes* as headings and followed these steps:

(a) I identified explicit references to knowledge, skills and attitudes from the resources and recorded key words/phrases on a large sheet of blank paper under the respective headings of *knowledge*, *skills* and *attitudes* (for example, *knowledge about safety / vulnerability*; *know what impairs driving*; *understanding peer pressure*).

(b) I used headings as umbrella terms to begin with. Under the heading *skills*, for example, I created a category of *mechanical/technical skills*. Within this category, I included skills relevant to the physical manipulation of a vehicle. Other skills like *perception* and *decision-making* were listed as different categories in their own right.

(c) I used the same process for *knowledge*. Several factors could be subsumed within larger categories. As an example, the following statements were all

incorporated under *technical aspects of safety/risk*: two statements referring to knowledge about *levels of risk*, four mentioning *alternatives for safety*, one concerning *awareness of safety* and one knowing how *to keep safe*.

Once I had confirmed the main categories, I assessed what patterns began to emerge and then considered what limitations, omissions, or gaps were obvious so that they could be addressed in some way.

2.3.1. Survey of road safety programmes and resources

Categorisation of keywords was fraught with difficulties. Three factors contributed to the difficulty of allocating keywords into categories. First, I had included a range of other non-classroom-based resources addressing adolescent vulnerability, to compensate for the lack of dedicated classroom-based, teaching and learning resources available. Next, the inconsistent use of educational terminology meant that I could not find a common interpretation or understanding for a number of terms like aims and objectives. The third involved categorisation of words or phrases that could be recorded in several categories.

A wide range of resources

I found in some resources that safety goals did not always relate to teaching objectives or learning outcomes relating to a classroom perspective. Goals in other classroom resources were not dedicated specifically for traffic safety either.

Some safety resource surveys targeting road safety education (Blair, 1993; Brazier, 1995; Cambridge & Francis, 1993; Dawe, 1995) contained important DE programme data but were not concerned with classroom teaching and learning. Their purpose was to highlight "what was happening in road safety programmes" (Dawe, 1995, p. 1) from a global perspective. For analysis, I ignored programme objectives that were not directly connected with teaching and learning.

Other resources consisted of classroom-related traffic support materials (RTA, 1994b; 1994c) and road safety research journal articles (Lonero et al. 1995) which had no classroom objectives but highlighted areas of safety for further attention. To overcome the lack of specified teaching objectives or learning outcomes, I interpreted some keywords, like making *wise choices*, as being traffic-related even though they were not explicitly stated. In the following example "to enable students to develop problem solving skills" (di Pietro and MacKenzie, 1994, p. 33) traffic references

could be implied from the resource's title, "*Choices, alcohol and road safety*". The lesson content was clearly organised to assist students develop abilities and confidence "to make judgements, to make choices, and to take actions which [would] determine the quality of their lives and their success at work, home and play" (p. 33). In cases such as these, I categorised similar statements as being *traffic-related* even if the relatedness was only implied.

Inconsistent use of educational terminology

Horneman (1993) contended that the value of DE programmes was not fully recognised when there was inconsistent use of terminology. He noted, in particular, a lack of clarity in describing realistic student *behavioural objectives* (learning outcomes) and detailing what teacher strategies were the most effective for them.

I found a similar inconsistency in a number of resources. The term *learning activities* equated with *focus questions* or *aim* in one resource ("What influences a driver's decisions?" RTA, 1994c, p. 16). However, the term *learning outcomes* was accurate and identified what the target group should be able to do following implementation of the programme. Use of an alternative phrase *key ideas* (my translation as *teaching objectives*) was noted in another resource to outline the teaching topics to be covered within the lesson or unit (for example, *Road Crash Types*; *Multiple Causation*; *Lack of Skill*). The use of a different term, *processes* (my translation as *learning activities*) was made to indicate *activities to be covered* by teacher and students. As mentioned already, generic skills like *communicating*, *interacting* and *decision making* were often expressed without reference to DE yet for effective learning to occur, *learning outcomes* needed to specify ideally what a student could achieve within a traffic safety context. Other resources were even less specific in their use of educational terminology.

I used information gathered from the resource to determine what might become valid *teaching objectives* and *learning outcomes* for traffic, whenever traffic was not specified. Comments in one resource related that "accidents can be expensive, time-wasting, and tragic. We live in a hostile environment. Accidents will occur less frequently if we understand what causes them" (Wilson, 1990, p. 3). In this case, the last sentence implies that by having an understanding of *traffic safety*, students are likely to appreciate that crashes can be reduced. I interpreted this idea as *traffic*

accident knowledge and recorded it within the category *crash information/facts*. I employed similar subjective processes in other DE resources to maintain clarity, simplicity and a level of consistency for traffic safety.

Concepts of *decision-making* and *choice* are similar in meaning but are different in intent. In one resource, *Dare to Drive to Survive* (New Zealand Police, 1994) it is specified that *making appropriate decisions* (skills) is important for safety. Another resource specified that *choices* (as *knowledge*, both informed and uninformed, RTA, 1997, p. 19) were important. A further resource provided an aim "to look at the idea of *choices* and focus on the sort of situation where the choice becomes critical" (New Zealand Roadshow Trust, 1993, p. 5). I ascertained whether *making a decision* and *choices* were terms being utilised in the same way. If they were different, then how were they different? *To make a choice* required information (*knowledge*) about alternatives. However *choice* needed to be understood before the *ability to choose* (*skill*) could be appreciated and activated. Linked with the act of choosing were various cognitive skills: differentiation, assessment, comparison, calculation and estimation. How each contributed specifically to traffic safety was frequently not stated. In most cases the resources required a teacher to apply the words or phrases to a traffic context.

In summary, I used context and semantic nuance to give a final placement of a word or phrase where it was ambiguous. *Choice* (choosing/making a choice) and *decision-making* were combined together as *skills*, and the category *alternatives for choice* (knowing about them) was grouped as *knowledge* within a larger category of *technical aspects of safety-risk*. I decided not to restrict categories to those that were explicitly traffic-related aims and or objectives. I could approach categorisation with greater consistency by interpreting them within a traffic context.

Concerns about programmes

Analysis provided me with a comprehensive overview of the DE content most frequently covered in DE programmes. However, several concerns arose for me.

First, I had learned from my classroom observations in 1995 and 1996, that it was too simplistic to regard adolescents as a homogeneous group. Secondary school DE programmes were mostly restricted to transition education students (formerly *work experience* students) who had specific learning needs not recognised in most DE

programmes. Differentiation of subgroups within a given population was seldom mentioned in DE resources. I found one exception indicated a need to cater for "students of different abilities" (di Pietro & MacKenzie, 1994, p. 1). It represented an assumption that a teacher would make the requisite adjustments from their pedagogical knowledge, expertise and experience of working with such groups.

Second, in some resources, students needed a higher level of verbal ability to understand stated purposes, tasks and activities than those in transition classes. Even though resources were designed for the appropriate age level, they were not pitched at an academic level *appropriate* for the DE students who were likely to be participants in this study.

Third, many of the activities and information showed that the learner was largely placed in the role of *receiver of information*. This predominantly didactic approach, consistent with education in the1960s and 1970s and a *rational/objective* approach to curriculum design (McGee, 1997), was often implied but seldom explored in DE resources. This style of teaching was not likely to be an effective method of curriculum delivery for the calibre of students who took DE in New Zealand schools.

Fourth, a number of resources advocated the *involvement of parents* and *members of the community*. In these resources, however, it was not clear what value such visits from parents and community members would have for the learner, or whether parents / visitors would be able or prepared to contribute.

Fifth, a number of general skills were regarded as important in the resources but *whether students could transfer knowledge* from a base of general skills and activities to a specialised field of traffic safety and then into behaviour in traffic was not known.

Sixth, what seemed to be overlooked with regard to adolescents was *the statistical danger of being a passenger*. LTSA statistics showed that adolescent passengers had the highest rate of death and injury of any other group (LTSA, 1994a, 1995b, 1996). This issue needed to be included within DE programmes as it was a problem recognised in the restrictions of a GDLS, "designed to give young drivers experience while being excluded from high risk driving situations" (Ministry of Transport, 1985; cited in Begg, Langley, Reeder & Chalmers, 1995, p. 177).

Seventh, courtesy was a term that surfaced frequently in casual conversations relating to driver behaviour. It was surprising that courtesy did not have a higher profile in DE and traffic safety campaigns considering that topics like *respecting difference*, being a *positive role model*, and *being responsible for safety* contributed to *attitude*. The concept of *courtesy* I believed deserved greater attention in terms of traffic safety.

My analysis of resources also showed me what areas I could explore further. These ideas are reviewed as part of the curriculum development exercise in Chapter Three.

Survey results: Programme suggestions

The survey of DE resources, shown in Figures 2.3, 2.4 and 2.5 highlighted areas that I could consider in a programme. The *skills* most often mentioned were:

- *Cognitive* skills involving measurement, assessment, review and analysis of traffic information and solving problems encountered in the traffic task. These skills were necessary to recognise danger, to make wise choices and to resist negative influences;
- *Perceptual* skills in traffic and practical driving skills which were limited by the opportunities available to practise them in a classroom; and
- *Interpersonal* skills involving communication, peer relationships and self-review which were important as a foundation for the development of responsible attitudes.

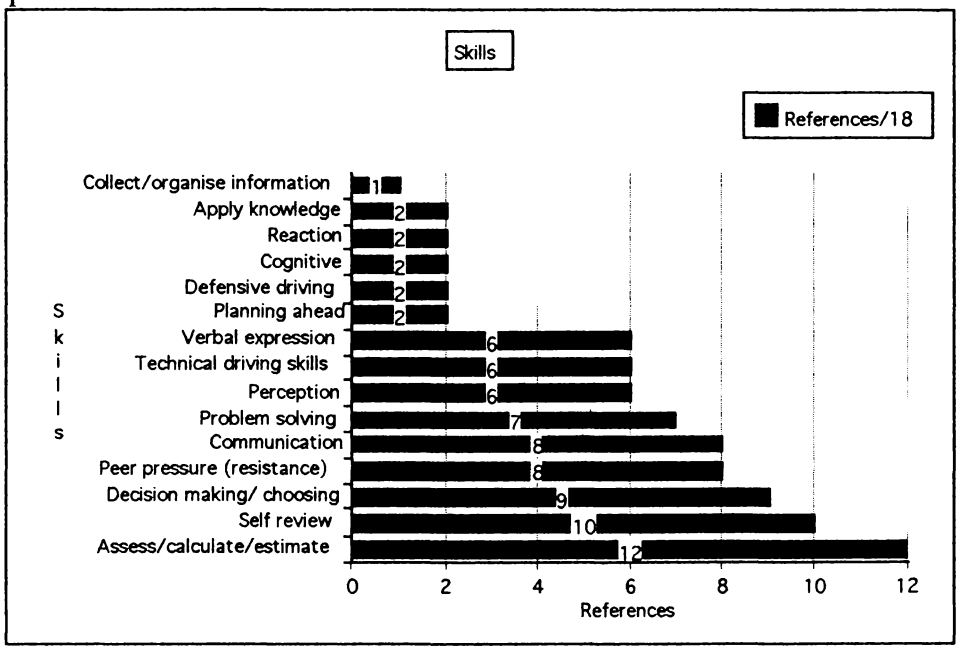


Figure 2. 3. Skills specified from a range of traffic education-related resources

Under the heading of *knowledge*, considerable attention was given to:

- Cultivating an understanding of the *causes of crashes* and *factors that contributed to danger.*
- Various *mechanical-technical knowledge* areas including knowledge of the road code, vehicle management factors and the effects of alcohol and drugs on driving.
- *Personal/social issues* which contributed to a better understanding of: influences on driving; self and personal matters; peer issues; rights and responsibilities of self and others, influences on driving, opinions and beliefs and passenger safety.

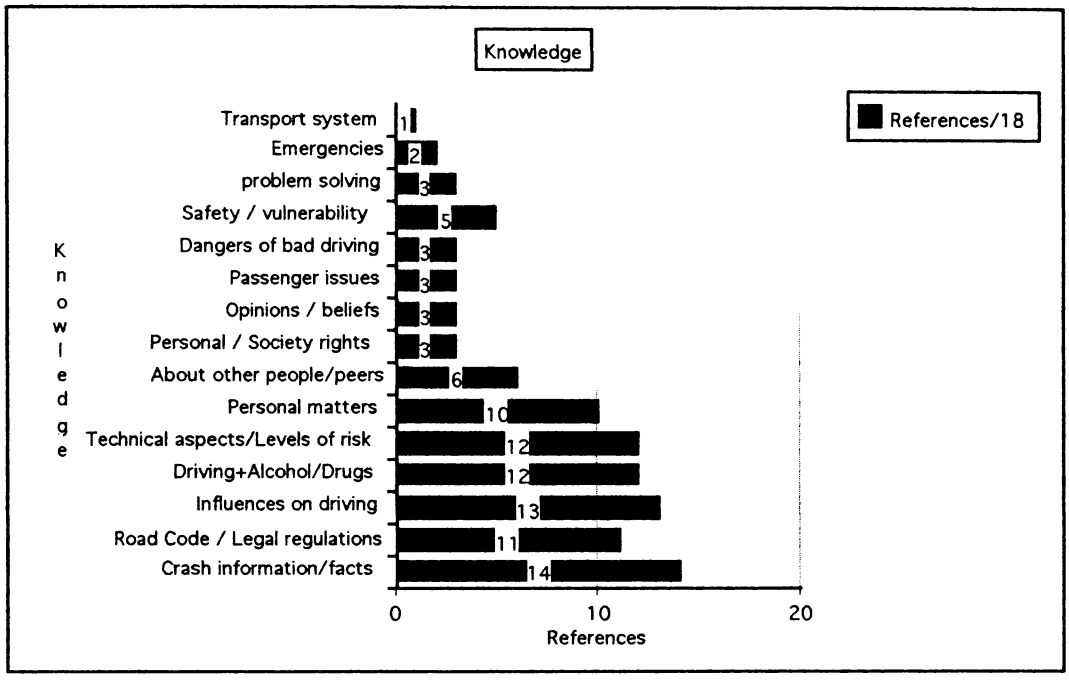


Figure 2. 4. Knowledge items from a range of traffic education-related resources

In addition to skills and knowledge, a consistent focus in several resources was placed on responsible behaviour from which wise decisions could be made. However, Best and Edwards (1982a) concluded that knowledge was not necessarily followed by action and responsible attitudes. Discrepancies were found between what respondents said when mixing alcohol and driving, and what was actually being done. Similar differences were likely to occur in "driver behaviour reported by individuals and what would be likely to occur in association with their peers" (1982a, p. 44). Peer influences on attitudes were strong.

As learned, relatively enduring dispositions "to respond in consistently favourable or unfavourable ways" (Fishbein & Ajzen [1975], in Ettinger et al, 1994, p.670), attitudes could be difficult to change but were regarded as important to explore.

The predominant emphasis in relation to *attitude* was firmly placed on: displaying *personal responsibility* with subcategories including becoming a positive role model to others, complying with traffic regulations, showing tolerance for difference, protecting others and resisting negative influences.

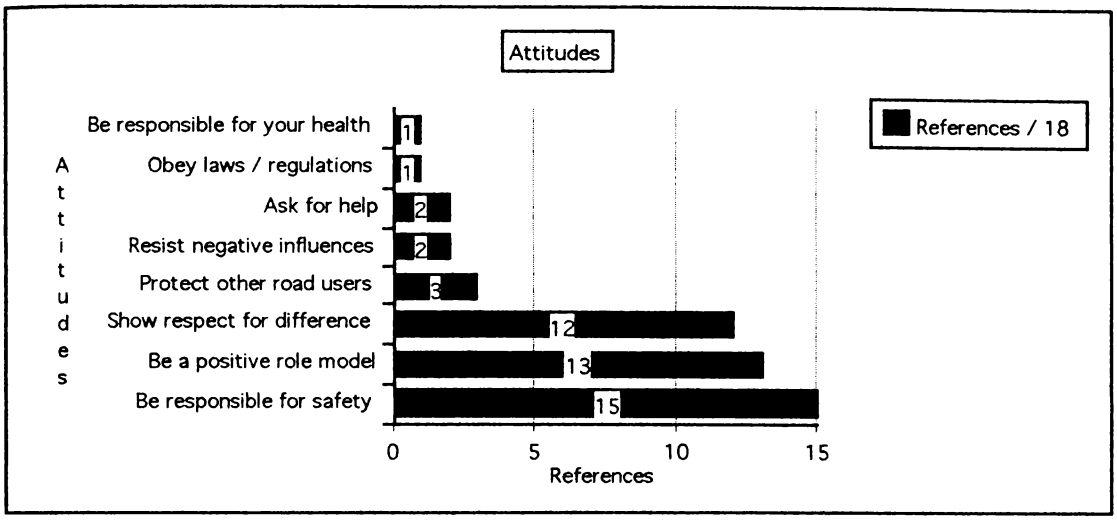


Figure 2. 5. Attitudes specified from a range of traffic education-related resources

In summary, *personal responsibility* was a common thread running through each of the three areas of content. It was consistently acknowledged in most programmes and reinforced an aim for adolescents *to become more aware of safety options that they could take as developing drivers* as an important component of an alternative DE programme.

2.4. Research Question 2: What features of being an adolescent need to be considered in a DE programme?

This study is necessarily concerned with adolescent learner/novice drivers aged between 15 and 19 years, collectively identified as having the highest levels of deaths and injuries each year in New Zealand since 1994 (LTSA, 1994a, 1995b, 1996, 1997b).

DE literature has continued to emphasise the importance of increasing the focus on traffic safety for adolescents. However, factors influencing ways in which adolescents learn were not pursued in DE research programmes, or reports, which followed implementation. Rothengatter (1994) noted that knowledge about educational process was seriously hampered by the lack of studies in DE. Cooper and McIntyre (1996) warned of the dangers of "making assumptions about what happens in classrooms or what effective teaching involves" (p. 3). As noted in the previous

section, I wanted to address the lack of pedagogical reference to the students in this research. As a consequence, I considered that these issues should be explored:

1) Who the students were, their characteristics, aptitudes, lifestyles and experiences;
2) How students would cope with the curriculum materials;
3) Whether students could understand the course content;
4) Whether activities were appropriate for the students;
5) What strategies were required for teaching DE effectively;
6) How learning might be assessed;
7) Whether students would view the course as helpful or enjoyable, and
8) What other student feedback was saying.

I needed to be personally involved in the practical processes of teaching and learning so that false assumptions about teaching and learning were not made and student achievement could be noted directly. Research on effective teaching in the past has "neglected teachers' thinking to its cost [and] at equal cost, it neglected pupils' thinking" (Cooper & McIntyre, 1996, p. 7). I next turned my attention to the characteristics of adolescents themselves.

2.4.1. Adolescence – general characteristics

Adolescence is variously reported as a transition between childhood and adulthood (Ettinger, Crooks & Stein, 1994; Page et al. 1992b). Descriptive parameters allude to biological, cognitive, personal and social dimensions. For purposes of this study I describe adolescents as young people aged between 15 years and 19 years as distinct from "young adults," who are aged between 20 and 24 years (Midland Health, 1996, p. 7). This equates with middle and late adolescence according to Schneider Fuhrman (1986).

Girls at this time often exhibit signs of earlier physical development than boys. However, each individual shows a range of variation within each discrete age level. Physical change in both male and female reveals an increase in muscle growth with organs of the body maturing and reaching peaks in strength and endurance. The attainment of highly tuned motor skills in diverse areas of human endeavour accompanies dedicated training.

Cognitive development is described as proceeding in a similar fashion with greater understanding and awareness of the world at large. Cognitive theorists, influenced by Piaget, who consider learning is subordinated to the laws of development, regard this development as "following laws both logical and biological"

(Conger, 1973, p.49). The targeted age group for this study generally correlates with Piaget's fourth and final stage of *formal operations* (Ettinger et al, 1994), which corresponds with the ages of 12 years and above. *Formal operations* is generally characterised by the abilities:

- To utilise abstract representations of concrete experiences;
- To understand symbolic concepts and use a complex array of language skills;
- To separate possibility from reality and use symbols to represent other symbols; and
- To coordinate multiple factors in solving problems (Ettinger et al, 1994).

These cognitive skills are said to allow for the systematic "processing of information and knowledge" (Ettinger et al, 1994, pp. 423-428).

Other cognitive factors mentioned at this age are the ability to reason, to think introspectively, to develop metaphorical and aesthetic understandings, as well as to develop an imagination and means for self-expression. The existence of ideals as concepts can encourage the utilisation of the powers of critical thinking in some. Together with the acquisition of quantitative skills, aptitudes show development in logical, mathematical, scientific and language skills. Qualitative dimensions are also noted as a concern with creativity and possibility; increased mental and physical capacities and the development of greater social cognition.

Adolescents often display ego-centric behaviours which Elkind (1978) aligns with the *personal fable* or the *imaginary audience* (Conger, 1973; Schneider Fuhrmann, 1986; Sprinthall & Collins, 1984). The *personal fable* can result from an "overemphasis on personal experience and leads to a belief that...there is no one else like her...[and others] couldn't possibly understand [her]" (Schneider Fuhrmann, 1986, p. 261). The *imaginary audience* is manifest in a belief that "others are as concerned about the adolescent's appearance and behaviour as she is and ...fancies herself to be the centre of attention" (p. 261). Perceptions of invulnerability can be linked to these behaviours leading to experimentation with drugs and early sexual relationships and sometimes a belief that "it won't happen to me" (p. 261). Over-confidence in the perception of risk seems to correlate highly with verbal perceptions of immortality and optimism bias (misplaced confidence) "in their own skills and ability" (Corbett, Simon, & O'Connell, 1998, p. 17).

It is also a time at which many seek to find a comfortable identity, which Erikson (1980) describes as a *psychosocial moratorium*. According to Erikson, personality development in people is an outcome from a series of transitional crises occurring during life. It is a time when "a number of different roles can be attempted and a number of different kinds of relationships can be tried" (Sprinthall & Collins, 1984, p. 268) when greater distance from adults occurs.

Other writers note diminished periods of concentration and the power of the moment (Page et al, 1992b), considerable inner turmoil (Rutter, Graham, Chadwick, & Yule, 1976), and in cases where no comfortable identity can be found, a state of being in limbo is also possible (Erikson, 1980). Peers often can hold greater status for adolescents than the influence of parents and teachers. Peer influence is at times a "potent force...[that] can involve physical threats, insults, humiliation" (Wilson 1990, p. 9) and can challenge parental or societal expectations. In such circumstances core values of common sense and safety can be compromised with little fear of adverse consequences for themselves.

On the other hand, peer groups also have opportunities to facilitate positive learning experiences through peer support programmes, Students Against Driving Drunk (SADD) committees and other peer leadership opportunities (Jackson, Dorman, Tennant & Chen, 1989; Laurenson, 1992; McKnight, 1990; Perry et al, 1989; Stewart, Cullen & Nolan, 1996). In a number of cases, DE students have often been used to convey important social messages because, according to Laurenson (1992) "you get through better with teenagers rather than adults pushing on. When adults are involved it sounds like parents telling you what to do" (p. 289). However, Page et al. (1992b) also highlight that adolescent decision-making processes, like many adults' perspectives can be "flawed by many logical errors and biases" (p. 15).

While adolescents can demonstrate their approaching physical adulthood in a number of ways, equally they may fail or choose not to recognise responsibilities pertaining to adulthood. Peer experimentation with alcohol and drugs augments the dilemmas some have to face when serious injuries or death occur. Regulation can vie with the excitement of contravention. At times, family values can be at variance with peer promoted values.

While this overview might suggest adolescents are a homogeneous group, this is not the case. With a considerable intra-personal variation between individuals, any smooth transition towards Piaget's "formal operations" stage does not necessarily occur with the onset of puberty (Dulit, 1975). Younger children can display signs of abstract thinking abilities in advance of their adolescent years (Ennis, 1982; Keating 1980), while others might never attain this level, even as adults (Kohlberg & Gilligan, 1971; Scribner, 1977).

Conclusions reached by Midland Health (1996) confirmed that young people in their health region were "at high risk...of premature death" (p. 77), at levels worse than in many other OECD countries. When statistics for premature death and injury were examined more closely, young men (16 to 24 years) had a risk of road fatality and injury three times higher than for young women. Midland Health (1996) reported that 86 percent of the people hospitalised from sporting injuries were "young men" (p. 72). The Accident Rehabilitation and Compensation Insurance Corporation (ACC) confirmed that the proportion of claims and the claim amounts, from young men to young women, occurred at a ratio of 3.5:1. Young men's higher risk of premature death or injury in a range of activities, has been attributed "to greater exposure to high risk leisure pursuits" (p. 72). While the gender safety balance is weighted against the male, in terms of speeding, of risk-taking, and incorrect driving behaviour, recent evidence suggests that females are not immune from the dangers and their rates of involvement are increasing. Taylor (1997) noted that "there was no difference in the number of accidents experienced by males and females" (p. 5). When accident numbers were adjusted for exposure, females were involved in 2.39 accidents per 100,000 km driven whilst males were involved in only 1.48 accidents per 100,000 km driven (p. 5). It depended on which measure was used in reports.

2.4.2. Adolescence - concerns in traffic

Premature death of adolescents and young adults on the roads remains consistently high in New Zealand and in countries overseas. In the years 1980-1988 when raw injury numbers were adjusted for population distribution, 15 to 19 year olds had the highest fatality and overall injury rates per head of population (Jones & Frith, 1988). Whines (1988) noted, before the introduction of the GDLS in 1987, with 15 to 19 year olds constituting 14 percent of the driving population, accidents involving them contributed to 27 percent of drivers involved.

Taking adolescent development and statistical evidence of their over-representation in road crashes together, the majority of deaths in this age group have been described by Midland Health as "potentially preventable" (Midland Health 1996, p. 76). Kirkwood (1988) also confirmed that their rates showed "the most potential for improvement" (p. 362). To seek answers to this traffic safety problem, a Parliamentary Select Committee report on road safety in 1973 recommended that the Road Traffic Safety Research Council investigate the high accident involvement of young drivers (Toomath, 1979). Several factors were suggested as possible causes for higher youth accident rates (Toomath, 1979):

- They did more driving than older drivers, and at times when risk of accidents was higher;
- They lacked depth and breadth of experience, thus being more likely to make faulty judgements;
- They took risks by showing off to peers without thought of danger to themselves or others (pp. A1-3).

The OECD (1993) indicated that:

> 18-24 year olds were characterised by self assertion, competitiveness, a desire to confront authority, a need to be treated on a par with adults and a fear of failure. This combination of characteristics was judged to predispose them to accept a high level of risk (p.80).

While in 1996, a drop in the national road death toll of about a tenth was achieved compared with 1995 (from 581 down to 514), the improvement did not transfer to improvements in the death rates for adolescents. They increased by almost half as much again from 64 to 94, although reported casualties dropped by a fifth in 1996. Statistics showed that: two fifths of adolescents who died were passengers; more adolescent passengers died than drivers; adolescents maintained the highest number of total injuries for any group in the previous three years; and males represented close to three quarters of all adolescent deaths and two thirds of total injuries.

Through the analysis of statistical data, knowledge of factors contributing to crashes and advances in technology and communication have contributed to a wealth of knowledge about crashes and those involved in them. However, the strategies capable of changing adolescent behaviours and achieving measurable improvement have not reached effective levels in New Zealand when compared with statistics from similarly motorised countries overseas (LTSA, 1996). The dilemma for authorities

concerning adolescent vulnerability has been that some form of educational initiative was needed as a countermeasure for what has become a serious social problem but what such an initiative could realistically provide was largely unknown. While a focus on teaching strategies and how DE is presented in classrooms was suggested (Horneman, 1993, Smith in Keegan 1994), I could neither locate nor gain access to reports of such practical classroom-based research.

2.4.3. Adolescence - sub groups

I realised, after preliminary investigatory work, that DE was generally restricted as a curriculum choice to transition education students who tended to be academically less able than mainstream students. Heavy curriculum demands on students who took six academic subjects restricted their access to DE in the schools used in this study. As a result, comments from several students and staff indicated to me that DE had low academic status for them. According to Clarke and Wrigley (1988) "high status in secondary schools is likely to be vested in those who are successful (academic) *subject teachers*, not in those whose concerns are with the pedagogical aspects of teaching" (p. 18). The implication within this statement is that low status accompanies "teachers who are concerned with students unable to attain high levels of academic achievement... [or] teachers of subjects which involve qualitative rather than quantitative learning" (such as the arts). The perception that "low status, among other factors, has led to poor performance" (Clarke & Wrigley, 1988, p. 18) belies the commitment many teachers have for students with learning difficulties. The collective outcome from policies involving curriculum choice, as far as the effectiveness of DE programmes in schools was concerned, was that the pool of students taking DE was further reduced and the potential benefit for the remainder of students was also diminished.

My early observations of DE in secondary schools showed that it was organised under the aegis of *transition-to-work*, *work experience* or *life-skills* departments, as an elective subject within those programmes. Many students in these DE classes exhibited minimal enthusiasm and drive for academic work. Several appeared to show a general reluctance to commence work in class quickly and I noted that classroom behaviour of many students was loud, brash, somewhat arrogant and over-confident. Other characteristics students displayed were short attention spans, and poor ability to concentrate on tasks without being distracted.

DE students invariably preferred to sit in friendship groups that frequently involved conversations that were not necessarily DE related. Their teachers tolerated this in most cases. There were some conscientious students in each class but most seemed to be uniformly *laissez-faire* in their manner, and evidence of independent student effort was shown by only a few in each class.

Students were also heavily dependent upon the teacher for lesson direction. Course materials were not physically obvious nor were exercise books in which students could record lesson content. Students often challenged safe and sensible suggestions made by teachers following discussions. Several individuals appeared overconfident, openly volunteering that on a number of occasions they had *driven without licences* and were not ashamed of the fact.

2.4.4. Closing note - adolescence

A medical analogy seemed appropriate. Adolescents in New Zealand have some of the worst statistics of traffic health internationally. I believed that they were in need of a reliable prescription to address their high levels of risk. However, the range of prescriptions (programmes promoting road safety) that had been provided in the past and were available presently did not seem to be working as specialists would have liked. Specialists recognised that there were problems and indicated where they lay, but attempts to research this further were not obvious.

Could adolescents themselves recognise their problem (high-risk pursuits), or what contributed to it (what contributed to their risky behaviours)? Were adolescents refusing to follow a course of safety prescriptions? Were some prescriptions more appropriate or effective than others? What dissuaded adolescents from getting advice and a prescription for better health? It was not clear whether adolescents wanted to get better (to reduce risky traffic practices) either. Answers to questions of this type could only be found by working along adolescents in the classroom.

It appeared that the adolescents selected for this study would be a diverse group. It was not clear, however, whether they could accept a DE programme as a benefit for their safety. Through my review of adolescent characteristics, I identified factors I would need to consider during the implementation process.

2.5. Research Question 3: What learning theories and associated teaching methods could assist in the development of a DE programme?

2.5.1. Learning Theories

Learning theories provide different rationales for the ways people learn. Evidence of learning is commonly observed through behaviour "such as action (muscular, glandular, or electro-chemical) or combinations of actions" (Gage & Berliner, 1998, p. 209). Implied within a concept of learning is a process of personal engagement with ideas and actions, which takes time and builds upon previous learning and experience. In schools, learning abilities are encouraged by giving students opportunities to remember, to understand and to apply knowledge. These opportunities can allow them "to acquire certain attitudes and values that are likely to be expressed (as *learning outcomes*) through *teaching objectives*" (Gage & Berliner, 1998, p. 209).

Early learning theory such as Pavlov's (1927) work in *associative learning* or *traditional learning* theory, which tested behavioural response in relation to stimulus, was followed by a process of modifying behaviour using rewards or reinforcers. This became known as *operant* or *instrumental conditioning* (Gibson, 1976, p. 113). It involved rewarding the learner whenever appropriate responses occurred (Conger, 1973, p. 40). The term *instrumental* applied to techniques or *instruments* which would guarantee the appropriate reward. Positive and negative reinforcers increased the frequency of operant behaviour as techniques of reinforcement to maintain or change behaviour. Reinforcement techniques used by teachers include:

(a) physical guidance, by manually assisting the learner (*practical learning*, Bawden & Zuber-Skerritt, 1991)
(b) verbal instruction, by explaining and giving instructions (*propositional learning*, Bawden & Zuber-Skerritt, 1991),
(c) modelling, by demonstrating how something should be done (*practical learning*),
(d) shaping, by arranging the learning experiences in steps so that the learner can easily acquire more complex skills (which could include *experiential learning*, Bawden & Zuber-Skerritt, 1991, or *interactive learning*, as a *process based approach*, Collis & Lacey, 1996).

Both classical and operant conditioning theories (two-factor learning) are acknowledged to contribute together to learning. Mattox (1997) refers to an ABC (antecedents, behaviours, and consequences) model of applied behaviour change. In this model Mattox describes traffic interventions as having an *antecedent*,

consequence or *mixed* focus. *Antecedent interventions* included "driver education, alcohol education, peer interventions, instructional parental involvement, media campaigns, and licensing policies and driving restrictions" (p. 1). *Consequence interventions* included "accelerated penalties, court-ordered programmes, and drinking and driving rehabilitation" (p. 1). He also noted that some programmes, which included "minimum drinking age legislation, blood alcohol concentration legislation, mandatory seat belt use, and graduated and provisional licensing" (p. 1) could be classified as *mixed interventions*.

In contrast to theories of *associative* learning, *cognitive-field theorists* have described learning in terms of an individual's perception of the world at specific moments in time. With maturation and experience influencing the way people perceive the world, a rationale was developed, based on past interactions with the environment, which could reflect dependable foresight and enable a person to behave intelligently. The cognitive perspective considers that an individual can gain understanding through mental representations of the environment including internal organisations of perception, thinking, reasoning and memory. Cognitive-field theory would view behaviour not merely as a collection of stimulus-response associations, as in an associationist view, but "rather as a meaningful product of perceptual changes due to interactions between the individual and environment" (Bigge, 1964; Estes, 1970, in Gibson, 1976, p. 147). Another difference between the two approaches is that stimulus-response theories rely on observable or overt behaviour exclusively, whereas cognitive-field theories utilise both objective and subjective data.

The role of *cognitive* development in learning has also been described in terms of two dimensions. A *quantitative* dimension involves the capacity to undertake and accomplish intellectual tasks while a *qualitative* dimension relates to ability to process, define and reason mentally. Qualitative work in cognitive development is well referenced in the work of Piaget. His concept of *stages* in mental functioning corresponds with the idea of qualitative changes occurring as an outcome from increases in maturity. Each stage progressively builds sequentially from one to another (Inhelder & Piaget, 1958). According to Piaget, the stages of cognitive development were perceived each with their own patterns of thinking abilities. His four stages are represented as *sensorimotor* (birth to 2 years), *pre-operational* (2 to 7 years), *concrete operational* (7 to 12 years), and *formal operational* (12 years and

older) stages. New skills and abilities were added cumulatively to those of an earlier stage. Concepts associated with the latter two stages (concrete-operational and formal operational) were likely to be the most appropriate for this study involving adolescents.

The concrete-operational stage showed that children's abilities are extended to think in relational and relativistic terms such as degrees of colour and size. A dominating trait during this stage was the notion that concrete thought remained essentially attached to an "empirical reality" largely representing a concept of what was possible (Inhelder & Piaget, 1958, p. 250). This concentration of thinking on *things* uses the "fundamental building blocks of...the Logic of Class (classification) and the Logic of Relations (relating things of different size)" (Dulit, 1975, p. 538).

In the formal operational stage, "three names that are used interchangeably...[are]: *formal* (a focus on form rather than content), *propositional* (relating to propositions and hypotheses), and *abstract* (where thinking is no longer bound by "the thing itself")" (Dulit, 1975, pp. 538-9). This stage corresponded with a shift from the real to the possible. Abilities to approach a problem by imagining all the possible relationships were combined with a *hypothetico-deductive* thinking, giving a greater depth to comprehension including "the arbitrary nature of hypothesis" (Conger, 1973, p. 159). I regarded this ability to rationalise abstractly and symbolically, to manipulate objects mentally and engage in deductive reasoning as an important area for me to explore with students in the development of activities and resources for a DE programme.

A different cognitive perspective on learning is given through *social learning theory.* Bandura is credited with promoting ideas, in which the learning of new behaviours is achieved through observation and social modelling. Bandura contended that children develop a moral sense by imitating the behaviour of significant adults or peers in their environment (Ettinger et al., 1994). Four phases of learning from models are suggested as *attentional* (a need for paying attention), *retention* (retaining the learning through schema), *reproduction* (performance of newly acquired behaviour with supportive guidance), and *motivational* (the potential to apply learned behaviour in contexts if positively supported). According to Gage and Berliner (1998), as far as social learning theory is concerned, "the positive and negative consequences of behaviour...are not factors in *learning*... but are motivators of

performance" (p. 239). Gage and Berliner (1998) also add that "modelling is not effective if the observer's beliefs, attitudes, sense of efficacy (competence to learn), and sense of purpose are not congruent with the learning task" (p. 241). The concept of congruency was likely to be important for this study.

When I reviewed a number of DE programmes and research at this stage of the project, I found only one programme had acknowledged a teaching approach linked to a theory of learning. Kirkwood (1988) reported that activities in the *Caltex Star Driver Secondary School Driver Education course* (1987) were designed to be consistent with Bandura's *Social Learning Theory* in which "people are given factual information about the issue in a direct and unemotional way" (p. 368). Rather than moralising on issues, the programme stressed "that people are responsible for the choices that they make...(and are taught) self-management techniques, with special emphasis on resisting social pressure to indulge in damaging behaviour" (pp. 368-369). Activities in other DE programmes conformed with particular learning theories but did not identify and acknowledge the links.

The frequent absence of references to theories of learning in other DE programmes was important to reflect upon. Did this mean that learning theory was not important? Did it mean that DE programme content or delivery was taken for granted? The lack of attention to student thought and understanding appeared to suggest that the important ingredients for programme development and implementation were *wisdom* and *knowledge*. This essentially conformed to a "process-product" model, which dominated in the 1970s (Cooper & McIntyre, 1996). A simple requirement to deliver an education programme based on this rationale was to have someone who was sufficiently qualified, or an expert (teacher), who could convey the appropriate knowledge to students. However, if DE programmes using this strategy were not regarded as successful, why were factors concerned with teaching and learning ignored? Other than Kirkwood's (1988) reference, DE programmes contained little reference to learning theory. It was an area to explore in the development of effective DE programme activities.

2.5.2. Teaching methods

In a similar way to theories of learning, teaching strategies for DE are largely unreported in DE research. Specific concern has been expressed (Lonero et al., 1995)

about traditional methods employed in the classroom that relied on knowledge transfer. A traditional didactic teaching style did not encourage learners to process information for personal understanding at their levels of ability. This approach tended to polarise students with learning difficulties from the more academically able, creating learning anxieties and forcing some to openly admit "we're the dummies" whenever they had difficulties understanding or achieving results.

I considered various learning approaches and began by reviewing a behavioural approach mentioned by Mattox (1997) and one of my supervisors. Based on my vivid experience of road trauma, it seemed logical to consider that the study of *consequences from crashes* might have some impact on student learning as a countermeasure against future road trauma. Road crashes could be introduced and analysed as part of a DE programme to highlight negative consequences resulting from them. If these consequences were presented to students effectively along ethical guidelines, the idea that the horrors of road crashes might encourage them to show at least verbal or visual evidence that greater care was important to pursue. This *antecedent* based approach (Mattox 1997) would utilise the traumatic crash experiences (reports of the consequences) of others, as reinforcement (or motivation) for them to take greater care (negative reinforcement).

However, it was also logical to think of a DE programme in terms of cognitive perspectives of learning as described by Kirkwood (1988), in which consequences of crashes could be reviewed and rationalised cognitively. Analysis of crash factors could reveal patterns in occurrence, which could then be organised to become the basis for crash prevention strategies. While such knowledge could remain inherent within students it could possibly be revealed through discussion, role-play and written exercises.

The theories of learning already outlined provided me as a teacher with a basis from which additional ideas and approaches for developing, implementing and monitoring a classroom DE programme could be advanced. I concurred with Kirkwood (1992) who noted that in spite of DE being a countermeasure against adolescent crash rates, DE had "received little attention from learning specialists" (p. 1). To address this, I planned to create opportunities for students to become interactively involved in learning using a range of reinforcement techniques connected with practical learning, propositional learning, modelled learning, and

shaping. I would also consider teaching methods from a developmental, discovery-learning, and problem-solving perspective.

I planned to develop activities based on the theories already mentioned and research them in practice. From there, I expected to be able to describe how teaching and learning methods might be improved.

2.6. Research Question 4: What teacher attributes are important for the delivery of DE in the classroom?

The role of the teacher has largely been ignored or has been taken for granted in DE literature. I could glean little from research at the time, other than an observation that a traditional didactic approach and a *teacher chalk and talk* model (Cook, 1992) have been criticised as being no longer appropriate (Horneman, 1993, Lonero et al., 1995; MOTO, 1995; Waller, in Keegan, 1994).

In seeking to redress the focus of DE away from content, Smith (1994) was of the belief that "the problem is more a matter of *how* [my italics] driver training and education are presented rather than what is presented" (in Keegan, 1994). Outside of the field of DE, what constitutes effective teaching and learning is recognised as a vital process involving all aspects of content, teaching and learning. Cooper and MacIntyre (1996) have highlighted the need for a focus on the practice of teaching and learning in the classroom. To understand this, they suggest that the most important aspects to consider are "the things that teachers and pupils try to achieve in their classroom teaching and learning, the ways they try to achieve these things and the problems they encounter" (p. 3). They could offer very fruitful starting points for generating hypotheses about effective classroom teaching and learning. They also mention that "only through knowing about teachers' and pupils' classroom practices and the thinking that underlies them will it be possible to theorise incisively about the limitations of current classroom practice" (p. 3).

Expressed in another way, Cooper and MacIntyre (1996) allude to teaching as a *craft*. To understand the craft of teaching more thoroughly, they suggest it is necessary to "gain access to, and thence possibly to *objectify*, the knowledge implicit in teachers' everyday practical classroom activities" (p. 4). They support the analogy of *craft* by considering that: a) each individual (teacher) will have a distinctive expertise, although it is none the less probable that some features will be common

across teachers; b) there is an emphasis on knowledge which is embedded in everyday practice; c) a craftsperson can analyse specific situations and draw upon his/her repertoire of craft knowledge and apply it appropriately in context. They also acknowledge that such experienced craftspeople are able to communicate their craft to willing learners. Therefore, teaching can be regarded as a flexible practice that can be applied within a classroom, which calls upon a teacher to select from a repertoire of strategies built up over years to address contingencies resulting from the demands of several curricula and from many students.

In support of a planned focus on classroom practice, Shulman (1986) complained of the neglect of what he labelled *pedagogical content knowledge*, "those aspects of pedagogical expertise which involve taking account of the content of what is being taught" (in Cooper & MacIntyre, 1996.p. 12). In particular, this relates to knowing:

- The things teachers and pupils try to achieve in their classroom teaching and learning and the problems they encounter;
- The thinking that underlies classroom practices;
- How to plan curricula that builds on the knowledge of practice.

Cook (1992) maintains that teaching method should be consistent with a learning theory arising from "a consideration of where learners are in their learning, not from subject habits or teachers' preferences...the impetus should be the learner in the school" (p. 223).

The lack of discussion of pedagogical issues arising from why DE has not been successful was supported by calls: for greater attention to issues such as defining teaching strategies (Horneman, 1993); for considering how driver training and education are presented rather than what is being presented (Keegan 1994), and a forewarning about the dangers of making assumptions about what happens in classrooms or what effective teaching involves (Cooper & MacIntyre, 1996). To these can be added observations by Biddulph and Biddulph (1997) and McGee (1997) who recognise respectively that teachers play a pivotal role as curriculum developers and are the ultimate power behind curriculum delivery. For too long the importance of the teacher in the teaching process has been ignored or taken for granted or perhaps has not been sufficiently understood in relation to programmes of DE.

Collectively, the role of the teacher is complex and consists of several components.

- Advanced curriculum (subject) knowledge and expertise about curriculum course requisites, contextual conditions, constraints and conditions;
- Diagnostic skills of assessing student abilities and the levels of their prior learning;
- Knowing what implications arise for lesson planning and course delivery;
- Multi-tasking abilities to analyse problems with content and student learning while being simultaneously engaged in course delivery and selecting teaching strategies from a repertoire of options;
- Being agents for change and developers of curriculum; and
- Demonstrating and imparting knowledge of the craft of teaching to others.

Therefore, a significant part of this study was to explore the role of being a DE teacher and would include:

1. Teaching and learning theories that could offer the most for the development and implementation of an alternative DE programme.
2. Knowledge of DE students, including their aptitudes, learning styles, personal aspirations, personal goals, and application to tasks.
3. Craft knowledge of the role of a teacher, including delivery styles, teaching strategies and interpersonal relationships with students; and
4. Skills of monitoring programme delivery; assessing student capacities and progress; and evaluating DE programme activities for their effectiveness in the learning process for students.

2.7. Research Question 5: Factors which influence the effectiveness of a DE programme

The OECD (1986) mentioned that "a programme is effective if it does what it aims to do" (p. 35). Their report *Effectiveness of Road Safety Education Programmes* (1986) identifies several factors that can have an influence on effectiveness of DE. The factors mentioned deal with instructional *product* (content) and some deal with *process* and include the:

1) validity of educational objectives,
2) relevance of educational objectives,
3) content and structure of instruction,
4) instructional process, and
5) acceptability of a programme for teachers and students.

I use the educational terms clarified earlier in this chapter for this discussion. Specific differences in the use of educational terms are contained within parentheses to maintain consistency.

1) The concept of validity is a measure of consistency between what is taught and what is capable of being achieved. This should also be linked directly with an educational aim. Valid educational objectives (*learning outcomes*), therefore, are likely to include safety knowledge, skills and or attitudes consistent with the *educational aim* and *teaching objectives* that are attainable by the target group from within the classroom. Valid teaching objectives are those which address problem traffic behaviours effectively. However, outcomes (*learning outcomes*) from some (*teaching*) *objectives* may be invalid if they are not linked directly to a *teaching objective*. Student knowledge about drink driving, for example, does not necessarily transfer into improved student driver behaviour because variables, like attitude and peer pressure, can influence student traffic behaviour outside the school environment. In this example, evidence of student safety behaviour beyond the school environment (which may be desirable) is an invalid *learning outcome* to expect from the teaching of theoretical constructs in a classroom.

2) Validity is also dependent on whether *teaching objectives* are relevant for the target group. Some objectives are termed *superfluous* if they have already been mastered or maybe are *unrealistic* or *unattainable*, "when the cognitive and/or psychomotor development levels required by the tasks are beyond the capabilities of the student" (OECD, 1986, pp. 35-36).

3) Another group of variables relates to instructional (teaching/learning) factors such as course content and course structure. A high level of internal consistency occurs when instructional content and teaching objectives are aligned. Effectiveness is compromised when teaching objectives do not relate directly to the (*learning*) *activities* or the content provided. A lack of internal consistency, for example, could arise when content, emphasising the acquisition of knowledge *about the effects of alcohol*, is aligned with a *teaching objective* which seeks evidence in practical terms rather than in knowledge recall, description or some other classroom or theoretically based response. Variables associated with the course structure also affect who is able to access a programme and receive instruction. It was revealed earlier that the pool of students able to take DE is reduced when school policies influence the subject options that are available to students. For a large number of school students, the timetable and personal choice restrict student access to a DE programme.

4) Three sets of variables have been identified as matters of instructional process (teaching and learning process): learner variables, instructional variables, and social variables (OECD, 1986). Variables linked with student learning are complex and involve physical maturation, gender, and cognitive functioning. The OECD reports that younger students are more likely to prefer a practical and experiential approach than older students who may be more able to cope with a conceptual approach. Gender differences are also noticeable in accident involvement, traffic behaviour and knowledge, but these differences "cannot be attributable to a differential effectiveness of such programmes" (OECD, 1986, p. 37). Attitudes have "a considerable influence on the effectiveness of traffic education" (p. 37), which was important to recognise. What needed to be explored in this research was whether risky attitudes could be influenced by DE activities or whether they would remain resistant to change.

Learner variables are also central to this study. The potential impact of subgroups within an adolescent population noted in Chapter One has been largely ignored. For this reason one of the research questions is devoted to exploring this issue in greater depth.

Instructional (teaching/learning) *variables* involve approaches to teaching and learning, and include physical classroom factors, lesson materials and other roles of the teacher. They have also been under-reported and have been included within the research questions. In particular I was interested to report on:

- the contributions made by the instructor (teacher),
- a range of instructional methods (teaching strategies and learning theories / activities),
- different media use (OECD, 1986, p. 38),
- the contributions made by others (like parents and the police) and
- alternative means by which a programme could be implemented.

Instructional situations relate to the contexts in which the instruction takes place and the resources available. The OECD (1986) report notes that the closer the proximity of instruction is to the traffic environment, the better it is for improving behaviour. The OECD also reported that traffic knowledge of children could be improved by classroom instruction, but "little [was] known about instructional methods" (*teaching methods and strategies*)(p. 39). However, the OECD noted that "traffic education gains in effectiveness if it stimulates active participation of the pupils" (p. 39).

Social variables include socio-economic background and socio-cultural factors which may have an influence on the target group. Immigrant minority groups, for example, are initially more at risk of danger than those of the majority culture because of the difficulties that they experience with language, culture, and access to resources. In addition, a lack of familiarity with the traffic environment and their socio-economic status (SES) can collectively limit the effectiveness of traffic education (OECD, 1986, p. 39) for them.

5) Finally, different levels of programme acceptance by teachers, students (Clarke & Wrigley, 1988), parents and road safety experts can either hinder or encourage effectiveness and can influence levels of improvement for students as a result. As has been mentioned already, subject status has an influence on the way teachers react to DE and the value of the subject in the eyes of those who are more academically able. The position of DE within the school curriculum is critical for effectiveness and for those who can access the learning.

As indicated in this OECD review, a comprehensive range of criteria can influence the effectiveness of DE. In addition, as highlighted in Chapter One, effectiveness is also dependent on a common understanding of educational terms and a consistent application of them within DE programmes and research. From the discussion of effectiveness so far, it is useful to emphasise that: a) only classroom-based (local) learning outcomes are valid outcomes to expect from a classroom-based DE programme; b) realistic outcomes can only be reliably confirmed by monitoring a programme in action.

Details of the factors involved in the effectiveness of DE programmes have frequently not been made clear. Having identified specific criteria likely to influence effectiveness in the previous section and having clarified DE terminology, I began to focus on the development of an alternative DE programme for the classroom. While I hoped like other educators that skills, knowledge and attitudes might be transferred beyond the classroom, for this study I would not be seeking improvements in the levels of adolescent road trauma. Instead my primary concerns about learning and safety would remain centred on identifying and achieving learning outcomes for as many of the students in the classroom as possible.

2.7.1. Conclusions

In this chapter I have emphasised that there is a lack of DE research available which explores the processes and effectiveness of teaching and learning. While teaching strategies and programme content were important for me to consider as a teacher, it was equally important for me to explore how the learner operated in the classroom using a DE programme designed to encourage them to become more aware of risk and safety. Student reactions to programme content and activities have largely been under-reported.

As a researcher, I planned through the five research questions to:

- Develop an alternative programme using information from the traffic resource survey;
- Monitor how adolescents responded to programme and activities;
- Ascertain what theories of learning could assist in the development and implementation of a DE programme;
- Reflect on my role as a teacher to seek ways of optimising learning for the DE students; and
- Consider how different activities and methods might be adapted or modified to optimise effectiveness for the students.

Bearing in mind the literature in this chapter, I focus in Chapter Three on curriculum design as a basis for the development and design of the *TAKE FIVE* DE programme.

Chapter 3 : Curriculum and Programme Design

3.1. Introduction

As a teacher concerned with adolescent traffic safety, I was interested to know how I could improve their understanding of safety through a classroom DE programme. In Chapters One and Two, I detailed a paucity of classroom-based DE research. It was also not clear what outcomes could be achieved from a classroom programme or what factors would influence adolescents to accept or reject strategies for greater safety. Pedagogical methods, learning theories and DE activities were, likewise, rarely discussed and calls for more research on such issues had not been followed up (AAA Foundation for Traffic Safety in Lonero et al.,1995; Horneman, 1993). As a consequence, minimal guidance existed for teachers who were interested in developing or implementing DE programmes.

In this chapter, I firstly review learning theories and associated teaching and learning methods raised in Chapter One, then explore approaches to curriculum design before detailing the design process I used to develop an alternative DE programme. I identify characteristics and views about adolescents raised in Chapter Two that could be relevant for this study, and conclude by making explicit personal assumptions that influenced me during the design process. I then outline the *TAKE FIVE* programme as it was developed.

3.2. Curriculum: Perspectives and design

Driver education curriculum *content* is often the most obvious feature of a DE programme but the *processes* involved in selecting content are not well reported. I review some aspects of DE content in this study because of the interrelationships that exist between teaching and learning, curriculum development and delivery. I found it surprising that little had been published about the nature of these relationships.

The term *curriculum* has a broader meaning than subject content. According to McGee (1997) the concept of curriculum needed to include both "planned educational activities" and "learning experiences...[resulting from] practice, which includes the evaluation of learning" (p. 15). In effect, a curriculum programme requires a set of teacher objectives, a set of content materials, planned learning activities, an

organisation for implementation and a method of assessing student learning outcomes.

I was interested in different approaches to curriculum development. A content driven approach involved curriculum developers organising themes, topics and planning learning activities and outcomes (Tanner & Tanner, 1980; Walker, 1990). This method, identified as a *rational/objective* model (in McGee, from Tyler, 1949) emphasised logical structures and stages designed to meet objectives arising from the needs of students, society and subject specialists. This approach involved setting objectives; designing learning experiences and content; organising learning experiences; and evaluating student learning. Programmes developed on these lines were mostly prepared by knowledgable people and presented to the learner as a fait accompli. However, I realised that even though such a didactic approach, largely characterised by the transmission of facts within a traditional DE lecture format, had been criticised as ineffective (Lonero et. al, 1995), I knew from my knowledge and observations of DE students and their difficulties with motivation, concentration, listening and learning that such an approach would not be appropriate for this study.

Another approach, recognising the value of interactions between students, teachers and knowledge within a curriculum plan, acknowledged the importance of education as both content and process (Cornbleth, 1990). McGee (1997) notes that this *cyclical* model, similar to one proposed by Nicholls and Nicholls (1978), viewed the curriculum as a "continuing activity undergoing modifications as new information becomes available" (McGee, 1997, p. 40). Structurally, the model was similar to the rational/objective model with stages of situational analysis, the selection of objectives, the selection and organisation of content, the selection and organisation of methods of teaching, and an evaluation of learning.

A further development, a *dynamic/interactive* model (Marsh, 1992), was a naturalistic model that emphasised "what teachers do rather than what they are supposed to do" (McGee, 1997, p. 41). In this model, curriculum ideas were organised well in advance but they required teacher deliberation to establish what specific learning activities and objectives would be targeted from the choice available. Teacher plans and materials to be used could be prepared once the direction was confirmed and a schedule for teaching, learning and assessment was established.

This model placed importance on optimising best practice from a choice of strategies and recognised that interactions with students were important developmental components in the curriculum development process.

In a similar way to the dynamic/interactive approach, McGee (1997) raised the possibility of using *action research* (AR) to enable teachers to systematically improve curriculum practice. McGee indicates that by implementing progressive cycles of planning, acting, observing, and reflecting, an "ideal approach to curriculum development" (1997, p. 42) is presented. I considered AR as a realistic approach to curriculum development because curriculum activities and ideas could be rooted and critiqued in practice alongside the learner. As a research study, curriculum activities could be scrutinised for their contribution to teaching and learning while they were in use in the classroom. As teacher and researcher, I could be involved continuously in analysing data from students, as a part of the curriculum development and improvement process, which could include change or modification of teaching methods, learning activities and learning outcomes. I could also see the potential for AR to assist me in my critique of DE pedagogy, which is outlined in more detail in Chapter Four.

Ideological and philosophical perspectives underpin curriculum development. Curriculum ideologies according to McGee (1997) are "belief systems about what schools should aim to do, what they should teach and how they should teach." (p. 17). They represent, as Eisner (1994) notes, "value premises from which decisions about practical educational matters are made" (in McGee, 1997, p. 17). A *liberal arts tradition* (intellectual traditionalism), for example, has been based on the study of "great books and myths, legends, fables, song, stories, poetry and paintings" (p. 18). While the goal may have been to develop a person's mind, this type of learning was more suited to higher academic achievers and independent learners. This mainly didactic approach which places "information in front of passive listeners" (Lonero et al., 1995, p. 15) has been regarded as ineffective for DE. *Social behaviourism*, which extends from a scientific tradition, emphasised the impact of science and technology on societies. A belief which sometimes accompanied this approach, along with the "basics of reading, writing, mathematics, science and technology" (McGee, 1997, p. 19), was that the "skills learned at school should be suitable for jobs" (p. 19). Social behaviourism was logical to contemplate in this research because of a functional

emphasis on practical skill development such as is required of a road user. An *experientialist* ideology, focussed on learner needs and democratic expression and emphasised that "children should learn democratic skills, such as learning to work and share with others in groups" (McGee, 1997, p. 19). I found these ideals were also relevant for DE, as safe and considerate traffic behaviour was an outcome from road users working alongside and cooperating with each other.

I was unsure at this exploratory stage whether a DE programme to be developed ought to lean specifically towards one of these ideologies when I could see that aspects from each ideology could contribute positively to a curriculum. On one hand I could see a need for students to be aware of statistical outcomes from crashes which meant that related activities would lean toward a social behaviourist perspective. On the other hand, the need to show greater concern for others to counteract egocentric behaviours, as might be shown in traffic, was an indication that related activities could possibly lean towards an experientialist perspective. At the outset, I felt that it was more important for me to consider what teaching approaches were likely to maximise safety for DE students, rather than adopting a firm ideological stance according to those outlined.

McGee (1997) also highlights four philosophical approaches from the work of Tanner and Tanner (1980) on which curriculum aims and practices could be based. (a) A *conservative vision* acknowledged that the school curriculum should be based on high culture in which the school's task was to cultivate the intellect of individuals so that they might attain academic excellence. Those unable to cope should be given "a curriculum based on folk knowledge" (McGee, 1997, p. 20). The search for excellence from students often involved a didactically-based delivery of curriculum. (b) A *progressive vision* involved students in social problem solving exercises creating "a democratic citizen who faces up to resolving issues confronting society" (p. 20). (c) A *romantic vision* is based on child-centredness, which emphasised "that children should grow and develop naturalistically and free from authoritarian constraints" (p. 20). (d) An approach involving *inner visions* focussed on the human condition and emphasised goals of "self-development and self-fulfilment " (p. 21).

Philosophical approaches that would best suit planned curriculum goals of developing greater enthusiasm for safety in this study were those that embodied a

progressive approach and inner visions. To address problems and make improvements to existing levels of safety, in line with a progressive problem-solving approach, adolescents needed to be concerned with developing a culture of safety to counteract risk-taking in traffic. In a similar way, a self-development and self-fulfilment inner vision approach was relevant, providing adolescents were prepared to recognise that improvements in attitude and behaviour were not only possible but were worth striving for.

According to the driver education teacher in one school, the placement of students in transition classes indicated that students had experienced barriers to learning at some stage. Such barriers noted by the Education Review Office (ERO)(1995b) include home and family conditions, like negative "parental attitudes to school and learning" (p. 6) resulting in poor motivation and "adverse peer pressure" (p. 7). Effective curriculum development and delivery was under threat when negative influences were accumulated. I was keen to acknowledge the presence of such barriers and planned to work alongside students to identify them and learn how to minimise their effect, given the levels and depth of enculturation that had occurred already. I planned to begin with authentic traffic scenarios and encourage students to seek answers to problems themselves, in line with a social behaviourist ideology and a progressive philosophy, rather than providing information for them. I had already noted two types of problem behaviour in my early observations of students. Non-compliant attitudes towards traffic regulations and a preparedness to take unnecessary risks endangering the safety of others and themselves indicated to me that the realities of road trauma were either not appreciated fully or were being ignored by choice.

In summary, I planned to draw on a mix of behavioural, cognitive and social learning theories as a foundation for developing a DE curriculum programme. In addition, through AR I would systematically plan, implement and reflect on actions in the classroom to report on learning activities, learning outcomes and improvements to my practice of teaching DE.

However, because I needed to convince DE teachers that I had a clear sense of direction and coverage for a trial programme, as a departure from giving participants a chance to provide input for the programme from the outset in keeping with AR, I

adopted a traditional rational-objective curriculum development approach (McGee, 1997). Once the teachers had approved curriculum ideas and the overall plan and structure, I could then invite students to contribute to subsequent phases of the curriculum development process.

Ideologically, I favoured a combined social behaviourist and experientialist approach in which students would be encouraged, through problem-solving activities, in line with a progressive philosophical approach, to consider how they might take greater responsibility for adolescent over-involvement in road trauma and reduce unnecessary risk-taking.

3.3. Views about adolescents

Research Question Two was designed to explore attributes that were important for adolescent safety. A summary of characteristics from Chapter Two revealed that adolescence was a time when:

- Cognitive and physical capacities increased;
- Abilities and capacities to process information and knowledge were extended;
- Abstract representations of concrete experiences and symbolic concepts were understood;
- Abilities to separate possibility from reality, to use complex language skills, and to coordinate multiple factors in problem solving were developed;
- Social and inter-personal relationships were explored;
- Egocentric behaviours could emerge as adolescents explored personal identity and personality development (*personal fable, imaginary audience & psychosocial moratorium);* and
- Over-confidence in the perception of risk, a sense of immortality and an optimism bias could be seen.

As already mentioned, adolescents were not a homogeneous group in spite of such generalisations. Personal experience and classroom observations led me to conclude that DE students represented a sub-group of adolescents who did not fit in with most of the characteristics in the general overview provided above. In their respective secondary schools DE students were identified as *transition education students*. The curriculum for transition students focussed less upon academic achievement and more upon giving students practical opportunities to become involved in work experience geared towards skill development for the workplace. As

this was the type of student who would be most likely to participate in this study, I decided to gather further information about them before getting involved with details of programme design. This decision was prompted by one of their teachers who indicated to me, in relation to this group that, "we have some real cases of attitude here that will be interesting for you". Without describing what this meant in detail, he indicated that there were responses from students which confirmed that they held attitudes in line with the last bullet point that were risky for themselves and others in spite of programmes being offered in the school. It appeared to be a challenge for me.

My subsequent observations in two school contexts revealed that a number of transition students were not conscientious about their schoolwork, were loud and boisterous, and had poor skills of concentration. Driver education teachers (DETs) often had to deal with students challenging their suggestions for greater caution. I recalled several students in each of the schools confidently claiming that "you don't need a licence to drive". Implicit within such statements was a personal belief, experience of, or exposure to, driving without a licence either by friends or relations. One DET alluded to a boy in his class who drove to school without a licence and in spite of discussion against the practice, the student continued to drive without a licence but parked further away from the school grounds.

I designed a questionnaire to take account of these behaviours, to survey the level of licence compliance and reasons for non-compliance so that I could consider the implications for a DE curriculum. I was fortuitously offered the chance to distribute the same questionnaire (Appendix A) while visiting a group of first year psychology students at the university. As over half of the seventeen university students were still teenagers, I could compare their responses to driving without a licence and their levels of compliance with the school group as a type of reference group.

The questionnaire was confidential and sought biographical details from students including their age, gender, ethnicity and licence status. I used a mix of closed and open questions to obtain information about the practice of driving without a licence, and opinions and ideas about non-compliance and how important it was to have a driving licence. The language used was simple. Frequency distributions were

calculated for closed responses, and responses to open questions were grouped into broad categories on a compliance-non-compliance or safety-risk continuum.

The results indicated that a third of the twenty DE students surveyed reported that they had driven without a licence whereas the full complement of seventeen university psychology students, with ages ranging from eighteen to forty eight, showed full compliance. Another third of the secondary student sample did not drive without a licence but knew of personal friends, parents or relations who did drive without a licence. The high level of licence compliance from university students contrasted markedly with the school students who drove without licences or knew of personal friends and relations who drove without a licence. Exploring the non-compliance further, I discovered that the seven secondary school students who said they had driven without a licence were male and of the seven, a low level of importance was attributed to the licence: three rated the licence as "not important", three reported that it was "important to show police if you were pulled up" and a nil response was given by the remaining student.

As there was no reason to doubt their answers, an implication of their perceptions, as far as the design of an alternative programme was concerned, was that a large number of the secondary school DE students brought attitudes to the classroom that compromised safety for themselves and others. This perception was supported by student comments ("I want to drive and can't wait", "because it beats walking", "it's too expensive", "licence taken off a drunk driver and I wanted to drive"). In one case, a student was encouraged to do so by a parent (" I have to drive mum round in weekends - Dad works then"). Students who admitted driving without a licence seemed unable to appreciate that knowing the road rules by studying for a driving licence was a valuable means of reducing the potential for crash involvement. Half of them recounted that the only important aspect of having a licence was to show the police (and in one case "if a pig pulls you up") in the event of being stopped.

The results of this survey confirmed my earlier impressions that the DE students in the secondary school were more susceptible to higher levels of risk-taking and were a group most in need of DE for greater traffic safety. There seemed to be some positive relationship between high achievement and licence compliance as the university sample indicated. None of the students in the university sample had

confirmed driving without a licence which contrasted noticeably with the school group. Therefore, as far as curriculum planning was concerned, I realised that the DE students who would make up the DE classes I would be working with would similarly show lower levels of compliance with traffic regulations, higher levels of risky responses and would be less likely to appreciate the safety advantages of having gained a licence to drive.

3.4. Learning theory

Research Question Three related to learning theories and associated teaching methods that were relevant for the development of a DE programme. Previous accounts of DE programmes offered little guidance concerning learning theories that were relevant to such programmes.

I was familiar with the main categories of learning theory (see Chapter Two) and planned to explore relevant aspects of behavioural and cognitive theories within the study. Mattox (1997) referred to an ABC (antecedents, behaviours, and consequences) model of applied behaviour change as a basis for traffic interventions. Interventions that focussed on antecedents which included "driver education, alcohol education, peer interventions, instructional parental involvement" (p. 1) were of relevance to this study. Several of the students had little idea of the impact of crashing and the behaviours that led to crashes. A behavioural approach could enlighten those who were either ignorant or chose to disregard the statistical evidence of adolescent over-involvement in crashes by highlighting factors contributing to adolescent road trauma. An exploration of the consequences of crashes could inform students about the horror and disutilities (negative outcomes) of crashes without them having to have first-hand experience. As mentioned in Chapter One, road crash reduction was not an appropriate educational goal to seek from a classroom based DE programme, but statistics and crash reports as evidence of crash consequences could be incorporated into a programme as a deterrent or negative reinforcement for greater safety. It was possible that some influence on behaviour from a programme beyond the classroom could occur but pursuing this was beyond the scope of this study.

Cognitive learning theory could provide a rationale for the development of activities as opportunities for students to analyse crash statistics and make suggestions for increased safety. My observations had revealed that several students

were likely to choose options carrying higher levels of risk than others. One such teenage motorcyclist and his pillion passenger had not worn a crash helmet, was unlicensed, was on an unsafe bike and had cut corners, and had travelled on the wrong side of a gravel road. He had endangered his own life, the life of a pillion passenger friend and seven members of my family by cutting corners. I believed that scenarios like these needed to be critiqued thoroughly by adolescents if such dangerous practices were to be curtailed.

Social learning theory also provided a basis for explaining why adolescents might initiate and encourage peers to perform dangerous acts. Bandura (1969, 1986) was able to demonstrate, in various studies, that "exposure to modelling can affect a person's behaviour in at least three ways. (1) learning new behaviour, (2), facilitating already learned behaviour, and (3) inhibiting or disinhibiting already learned behaviour" (Gage & Berliner, 1998, p. 234). Studies of observational learning demonstrate that people often learn to do what they see others doing, therefore "teachers need to provide students with models of wanted behaviour and reduce their exposure to unwanted behaviour" (Gage & Berliner, 1998, p. 236). In this way, social learning theory and operant conditioning are alike. "Both recognise how reinforcement and punishment can shape and maintain behaviour" (pp. 238-239). With regard to social learning theory, reinforcement and punishment do not account for the learning itself but rather affect "the learner's motivation" (p. 239). Traffic authorities in New Zealand have recognised that peers are a powerful influence on risky driving practices and as a result, have drafted regulations restricting novice drivers from carrying passengers while they have a restricted licence under a GDLS.

In addition to traditional learning theory, another theory had a part to play in this study. Research into driver behaviour had reported cases of fundamental attribution error (Baron & Byrne, 1987; Ettinger et al, 1994; Roads and Traffic Authority, 1997; Ross, 1977). Attribution theory is concerned with the social perceptions and judgements that are made about why people behave as they do (Ettinger et al, 1994; RTA 1997). Attributions allow people to make sense out of other peoples' actions, attitudes and personality traits. Two perspectives used as a basis for attributions of behaviour are dispositional (internal or personal) causes, or situational (external) causes. Errors in the perception of self and others can contribute to unrealistic and inflated views of personal skill and competency, which can result in

overconfidence, increased risk and an optimism bias. For this study, students needed to appreciate how dispositional and situational influences related to driving tasks, given that I had already observed a number of students who claimed they did not need a licence to drive a vehicle.

Having viewed the tragic consequences of several crashes, I was keen to learn whether students would rationalise from DE studies how such events could be avoided and whether they would be motivated to choose safer alternatives to reduce the likelihood of personal injury and death. A range of safer options was often available but in order to adopt these options, students would need to improve their ability to assess risk. Before choosing safer options from a range of alternatives, students would also need to have practice in problem solving, causal and comparative analysis, information processing and application exercises, as well as an ability to recognise and rank alternatives. If students could recognise the benefits of being safer road users, it was also possible that they might appreciate their vulnerability more and in so doing, might be prepared to take steps to reduce their levels of risk-taking.

Given the theories mentioned, I was ready to consider the finer details of management and task design. I drew on a mix of learning theory. A behavioural approach was to be the basis for my attempts to focus student attention on recognising adolescent over-representation and the consequences of risky behaviours. Cognitive learning theory would become the basis for my view that students should actively analyse crash factors, compare statistics, confirm patterns of occurrence and eventually synthesise information into strategies for increased safety. I was keen for students to be able to rationalise what behaviours were required to avoid the negative consequences of crash involvement. Social learning theory would be incorporated to counteract strong social pressures exerted by peers in traffic contexts using adult role models for safe traffic behaviour. Attribution theory would be examined as a factor in the analysis of crash reports.

Although specific learning outcomes would be limited to what could be achieved within the classroom, I expected to find verbal or written responses showing a greater realisation of possible dangers as a result of programme activities. Acknowledging Best and Edwards' (1982a) observation about reported verbal behaviour not being a reliable indicator of actual behaviour, I conceded that the recall

of knowledge was one step on the way towards applying safety knowledge in a traffic environment and an ability to verbalise responsible attitudes towards driving behaviour.

3.5. *TAKE FIVE* DE Programme

It was clear from a review of literature concerning classroom practice of DE (Horneman, 1993; Kirkwood, 1988; Lonero et al., 1995) that there was a need for a greater focus on "how driver training and education were presented rather than what was presented" (Smith in Keegan, 1994, on line). The phrase "take five stay alive" emerged as a metaphorical theme for a programme when I considered novice drivers and reasons why they should be encouraged to slow down and think more carefully about all facets connected to the task of driving. The basic idea behind the phrase "take five" (viz. "take five" [minutes break for a little conversation]) emerged from the song *Take Five* by Dave Brubeck. I believed that the phrase had the potential to be applied to traffic safety.

In terms of increasing personal safety by understanding the causes of crashes, adolescents needed to recall seventeen possible causal factors listed in the annual LTSA reports Motor Accidents in New Zealand (LTSA, 1995b; 1996). As it is unlikely that people can hold in short term or working memories this number of factors at one time without multiple rehearsals or other mnemonic devices, I considered clustering and thereby reducing fourteen of the seventeen factors with a human element to five as an exercise in simplification. Human factors were important for students to understand clearly as they caused between 85 and 95 percent of crashes and crash costs (LTSA, 1995c, p. 21; 1996, p. 49; National Highway Traffic Safety Administration, 1997; Sabey, 1991; Storie, 1977). These incidents of road trauma were often described as a health risk deemed to be preventable (Kirkwood, 1988; Midland Health, 1996). My arbitrary choice and reduction of factors to five coincided with my early concept of the phrase "take five, stay alive" and the analogy of a traffic hand sign for stop. My rationalisation of crash factors (Appendix C) as a traffic safety strategy became the principal idea behind the programme title of *TAKE FIVE* . I could foresee that the title phrase "take five - stay alive" might later represent a checklist of five elements of a safety strategy for road users, which I address later on in the study.

3.5.1. *The TAKE FIVE Programme: New Ideas*

I considered two key premises to assist students to learn more effectively within the *TAKE FIVE* programme. First, I wanted to develop learning activities in which the reality of crashes could be reactivated. I called these activities *reality activation* exercises and they are described next. Second, I wanted to develop a systematic and sequential programme structure and topic selection that could enable students to recall the consequences of crashes more easily. In effect, I wanted students to synthesise knowledge from the *TAKE FIVE* activities and to cluster the fourteen human factors contributing to crashes into five. These five human factors could become a checklist for increased traffic safety.

I. Reality activation

The term reality activation emerged from my reflections of personal involvement with crashes; a fatal head-on crash and several lucky escapes as a cyclist and motorcyclist. I began by using the consequences of crashes as a concept related to behavioural learning theory. The study of crashes had the potential to influence students to develop a deferent attitude towards risk-taking. I planned to activate the tragic consequences of authentic crash reports as negative reinforcement. A cognitive dimension would be added as behaviours and antecedent conditions were analysed, examined and explored in detail. Reality activation therefore, was designed to present the reality of road trauma to students, initially using my personal first hand experience but also including the experiences of others. I would invite students to re-enact crashes reported in newspapers as participant actors or role-playing survivors. It was likely that through such activities students would discover and report on the "disutilities of crashes" (Jonah, 1986) such as permanent injuries, loss of the quality of life, the duration of convalescence, the impact on families and friends and other intangible effects. Other disutilities such as "property damage, higher insurance premiums, loss of driving licence, fines and parental censure" (Jonah in Lonero & Clinton, 1997a, p. 6) would also be introduced later on in the course.

It was possible that reality activation (RA) activities could also bring to the surface ethical issues about past trauma in students who had been involved in crashes or had lost people close to them. I was prepared as a teacher and a surviving victim myself, to initially address this contingency as part of the introduction of the course. Depending on the responses from students, I planned to access counselling support

through the school guidance system if it was required. It could also be possible that I could incorporate students' anecdotal experiences within the programme itself if the opportunity arose and I had obtained their permission. I felt that it was crucial that the reality of crashes should be clearly understood and the implications appreciated.

II. Synthesis of crash factors

If students were to understand all the factors capable of contributing to crashes thoroughly, I believed that seventeen were too numerous to be remembered and applied as a part of an everyday safety strategy. Human memory is thought to be capable of remembering between five to seven bits of information at a time; more information than this can cause previously remembered information to be lost through negative transferance. I also believed that a monothematic approach, most often used in traffic safety campaigns, detailing single factors such as speed, failed to make it sufficiently clear to road users that crashing was frequently not the result of one factor alone. More often than not, crashes involved multiple factors operating together.

Information overload is an important factor for novice drivers when executing driving tasks according to Gregerson (1996) because of the high cognitive load required to coordinate physical, perceptual and judgement skills that are not yet automatic. I also needed to address monothematic approaches to safety. I figured that if the most important human factors contributing to crashes were reduced to five, as explained earlier, they would likely be recalled more easily. In turn, their recall as a group of factors interacting together, would counteract any notion that crashes only resulted from single causes (like alcohol or speeding) as can be inferred by monothematic traffic campaigns.

There existed a potential also for the five key factors to be used in the future as a checklist for traffic safety (*TAKE FIVE* checklist for traffic safety [*T5CTS*]) in line with health promotion strategies using concepts such as *risk modification*, *consequence mitigation* (Andersson & Menckel, 1995) or *reactive prevention* (Catalano & Dooley, 1980). The checklist could be used "to suggest explanations and to predict consequences" (Cavanagh & Rodwell, 1992, p. 6) and would be enhanced by being simple and memorable.

As shown in Appendix C, I rationalised human factors from the annual LTSA report *Motor Accidents in New Zealand,* (1995b, & 1996, p. 49) into five which became:

- Reduce *speed,*
- Avoid *alcohol* and *drugs* when driving,
- *Concentrate* on rules, safe practice, and avoid distractions,
- *Communicate* well and give adequate advance warning, signals, and
- Show *courtesy* by being cooperative and helpful in traffic.

The three words beginning with "C" were compound concepts, covering multiple human factors. Some causes of crashes, such as overtaking, a contributing factor in 6.1 percent of fatal accidents (LTSA, 1997b, p. 33) could be attributed to all three factors of concentration, communication and courtesy.

Once I had prepared an initial curriculum draft for the teachers in the targeted schools I planned to work in, I began to work more closely to establish a framework within which content materials could be structured.

3.5.2. *The* TAKE FIVE *Programme: Aim and Learning Outcomes*

My initial aim was for adolescents to become more aware of safety options that they could take as developing drivers. The learning outcomes extending from this aim needed to be achievable by DE students in the classroom.

On the basis of my survey of eighteen DE programmes (reported in Chapter Two) highlighting skills, knowledge and attitudes that I could incorporate into the *TAKE FIVE* programme, I considered the following traffic related learning outcomes. Students would have opportunities to:

a) acquire the skills to:

- Measure and compare statistics of crashes from reports and crash analyses;
- Assess danger and risk from the traffic environment reports, and to explain causes of crashes;
- Explore social problems likely to be encountered in traffic situations (e.g. dual or different perspectives);
- Practice effective communication for the traffic environment; and
- Conduct self-review as a foundation for developing responsible attitudes in the traffic environment.

b) develop knowledge about:

- The causes of crashes;
- Factors that contribute to danger and safety in traffic;

- Mechanical-technical-legal knowledge of the road code and safe vehicle management;
- The effects of human factors and other influences on safe road usage;
- Personal and social issues and their influence on driving and other forms of road use;
- Personal influences affecting behaviour in traffic;
- Peer issues affecting behaviour in traffic;
- Rights and responsibilities for maintaining safety of self and others; and
- An acknowledgment of different but valid opinions and beliefs.

c) develop positive attitudes through:

- Being responsible role models for others in traffic;
- Showing support for compliance with traffic regulations;
- Showing tolerance for different road user groups in traffic;
- Demonstrating ways to protect passengers and other road users; and
- Resisting negative influences on the road.

The next stage was to develop teaching objectives, and learning activities in keeping with them and to organise them into a logical structure.

3.5.3. *The* TAKE FIVE *Programme: Structure*

The above learning objectives provided the scope for me to develop a programme further. I planned to cover four sequential learning areas over the duration of the programme as a structure within which I could organise teaching objectives, teaching topics, learning activities and outcomes. Each phase would build on the previous phase beginning with *analysis* as the first phase followed by *pattern confirmation*, *knowledge synthesis*, and *application*. Preliminary detail of each phase involved:

> *Phase One: Analysis (of crash factors)* to establish problem areas. From the analysis of crashes, students would become aware of the consequences of road trauma. This phase linked topics thematically to *the past* (What do historical patterns of statistics reveal regarding levels and causes of adolescent road trauma?). In this phase students would be given a chance to discover and identify the consequences (disutilities) of road crashes through *reality activation* exercises. Students would conduct a number of crash analyses, and I anticipated that the insights gained from these exercises would become obvious in their classroom work, discussions and in written reports.
>
> *Phase Two: Confirmation (of patterns of crashes and trends)* which could enable students to *recognise* and *identify* causation. In this phase, students would compare crash data from the previous phase and with reports from *the present* (What is currently happening with adolescents at the moment?). In this phase, the confirmation of crash patterns could lead to factors that might

require further attention, especially positive ideas for risk reduction or risk elimination.

Phase Three: A synthesis (of ideas) to enable students to *confirm strategies for safety.* In this phase I planned a focus looking towards *the future* (What positive strategies for improvement can occur realistically from a classroom DE programme?). As a part of the *synthesis phase*, human factors involved with crashes would be clustered to five. I was keen that students should discover a comparable list for themselves in keeping with a problem-solving curriculum approach. From this list, safety strategies leading to risk reduction or elimination could be further developed. This phase represented safety knowledge and strategies as antecedents for higher levels of traffic safety in the future.

Phase Four: Application of *learning in other ways.* As the final phase, I aimed to determine whether students could reliably demonstrate increased levels of safety. One part would consist of a summative evaluation of the programme and of student learning. Students would be asked to apply their safety knowledge to ten everyday traffic situations. Another part concerned an arts-based task that could assist in mediating learning for DE students. An arts project, aligned with principles of accelerated learning, might allow for positive DE outcomes to be reinforced symbolically through different media and might have benefits for the transition students in this study. *The Arts,* as defined in the *New Zealand Curriculum Framework* (MOE, 1993; Eames, 1994; Education Review Office [ERO], 1995a), have the potential to reinforce learning in different curriculum areas through knowledge transfer, programme integration and through abstract representation in different media. An art-based task could provide a more visual and tactile approach to learning compared with a predominantly verbal approach. It could likewise provide an innovative conclusion to the programme and new ideas for research.

3.5.4. *The* TAKE FIVE *Programme: Teaching Objectives and Topics*

From this four-phase structure, I developed teaching objectives listed in Appendix D. Teaching objectives were prescriptive and related to topics in each phase (Appendix E). I sourced most learning activities from local and national news media as they generally reflected contemporary traffic–related issues relevant for students (Appendix F). More detailed lesson planning could follow from this. As an example, students were asked to describe possible outcomes from crashes and suggest causes as in a sample learning activity from the analysis phase in Figure 3.1 below.

I prepared a series of lesson tasks in advance so that I could teach each topic as effectively as possible.

Phase One: Analysis: The Past. *Reality activation* activities are planned to assist with the analysis of crashes. Students use a crash report and become involved as survivor-actors in the report.
Teaching Topic : Unit #2 (b) Head-on Survivor: a story of a honeymoon couple's head-on crash experience.
Take Five - Sample Teaching Objective 1 Involve students in identifying what they know about crashes. (Skills - measure/review/self review; Knowledge:crash outcomes/causes)
Take Five - Sample Programme Learning Outcomes 1 Students review/share their existing knowledge, using an authentic crash scenario, as they describe dangers and possible outcomes in a letter to family / friend.
Take Five - Sample Programme Learning Activity 1 Imagine that you are the honeymoon couple mentioned in this head-on crash. You are one of the survivors but have been injured and are in hospital. You are talking / writing to a family friend or relation recounting your ordeal. Describe the injuries you have and what this means for you.

Figure 3. 1 Sample Teaching-learning overview: Phase One / Analysis / Unit #2

I recognised from early observations that the DE students may not have great skill or capacities for information recall or writing; therefore I called on them to use their imagination based on previous experience or general knowledge. I was interested to note whether the task of writing a letter to a friend or relation telling them of their tragedy might also encourage them to tap into *affective* responses, to make the task more user-friendly and less stressful. Tasks were planned on photocopied sheets or overhead transparencies. A sample lesson plan is included in Figure 3.2.

3.5.5. *The* TAKE FIVE *programme: Student Assessment*

I planned to collect a range of data using different sources to formatively assess teaching and learning processes and programme content. These assessments would indicate what changes I might need to make during the programme. A pre and post-programme questionnaire using a Likert-type scale was planned to track levels of improvement from the beginning of the course to the end (Appendix G).

UNIT #2 Head On Survivor Date July 16 1996 Class F5/6

Outcomes: Developing an understanding of the effects of road crashes

1 Understanding terms human "vulnerability" & "road user"

2 Understanding of "impact" on individuals (damage, injury, healing, insurance, property, etc....)

3 Consider real costs (financial, emotional etc).

4 Understand how "factors" contribute to crashes.

Content:

Lesson Format:

Scenario #2:

1 In groups of three, list possible injuries of the driver in the crash.

2 List also the factors likely to have contributed to this crash.

3 Discuss as a class the results, matching with vocabulary.

4 Show and discuss the Risk By Cause OHTs (Ref below)

5 Involve creative letter writing from teaching topic (b)

Vocabulary

Road User
Vulnerability
Impact
Human Factor
Road Factor
Vehicle Factor
Priority
Position

Focus / Summary: Death or injury is not selective about who becomes a victim. All "*road users*" are equally at risk and are "*vulnerable*". Injuries (sometimes severe) are possible and the "*impact*" of a crash involves "*social*" "*emotional*" and "*financial costs*". The causes of crashes are mostly due to "*human factors*". Other contributing factors include the "*vehicle*" the "*road*" and the "*weather*".

References:

LTSA (1995c) *Safety Directions (2nd Edition)*. Wellington N.Z.: LTSA. (pp. 21-22).

Figure 3. 2 Sample Lesson Plan: Phase One / Analysis / Unit 2

The methods of assessment included:

- Student diaries that I would mark on a daily basis to record their responses, ideas and suggestions (examples, see Figure 3.3 & Appendix I).
- My personal teacher-researcher diary to record personal comments and observations about student achievement (Appendix J).
- A feedback questionnaire in two parts for the conclusion of each intervention. The first would involve students using an exercise in cloze (completing missing words) to show understanding of selected elements of content. The second part would provide personal feedback from students about the teacher, course, activities and suggestions for improvement (Appendix L).

Recording: Monitoring: Assessment

Students to record all points below in their diary as summary record.

1 Students estimate what they might be doing in 4 years (to highlight personal goals connected with driving).

2 List possible injuries sustained in the selected crash and the likely causes.

3 Compare with a class list for consistency.

4 Compose a 'survivor's' letter (creative).

5 Interpret a pie graph about causes of road crashes.

6 In the light of this develop summary points (as in *Focus/Summary* in Figure 3.2).

Figure 3. 3 Recording, Monitoring and Assessment: Phase One / Analysis / Unit 2

- An application exercise in which students could describe in verbal or written form safety options they would take in ten authentic traffic scenarios (Appendix M).

3.6. Personal assumptions

I was conscious that I brought a number of personal assumptions to the design of the TAKE FIVE programme. By making these assumptions explicit, I was declaring the rationale on which the programme was based and could review them where necessary. Classroom practice would confirm the accuracy of my assumptions, which I gathered from a mix of educational reading, personal experience and ideas. I felt that it was necessary to prepare for a situation, as Poskitt (1995) realistically notes, that "pupils challenge...ways of doing things" (p. 12). I would not know how student behaviour and reactions would affect the activities and delivery of the programme until the implementation was operational. I knew also that "a different combination of children in classes...[can often cause] us [as teachers] to modify classroom management practices" (p. 12) and it was likely some practices would need to be adapted as a result of this. The sources of the assumptions I brought to the programme are included in parentheses.

First, I believed that students might take ownership of the problem of over-involvement of road trauma following their discovery of the comparatively high rates of death and serious injury for their age group. (This assumption emerged from the aims of most DE programmes to reduce the risk of crashing. It was also based on reports of DE being of high interest for adolescents and an altruistic hope that adolescents would see a logic behind something that was "in their best interests" longterm).

Second, I believed that students would prefer to be independent learners and would be enthusiastic about the activities designed to give them that independence (This assumption emerged from literature on interactive learning approaches, from ideological and philosophical premises concerning problem solving and child-centredness, and my parental experience in encouraging independent learners).

Third, I believed that students would be sufficiently motivated and would adopt a more serious approach to the DE programme being developed as a result of my first-hand personal experience of a head-on crash, resulting in the death of an adolescent student of their age. (It was my hope that students would recognise the

level of danger in similar events and would be receptive to learning from my personal experience as in "propositional learning," [Bawden & Zuber-Skerritt, 1991]). I would be verifying, from a behavioural perspective, the consequences of a fatal crash involving two students their age who were not prepared to comply with traffic regulations.

Fourth, I believed that the reported appeal DE had for adolescents and associated personal goals to become safer drivers, would be sufficient to make students enthusiastic and cooperative in a classroom situation. (The reported popularity of DE emerged from DE literature, especially Simeon [1979]).

Fifth, I believed that students would be able to make abstract conceptual links with ideas emerging from the programme allowing them to understand where they fitted into traffic safety. (This assumption emerged partly from Piaget's cognitive stage development theory of learning and my personal experience with secondary students and my own teenage children). This coincided with Piaget's formal operations stage and with middle and late adolescence (Schneider Fuhrman, 1986).

A sixth was a personal assumption that reality activation activities would assist students to understand causes of road trauma and motivate them to adopt safer attitudes and behaviours in traffic. (This idea was based on my crash experience and the notion of reality representing the consequential horror of what really happens in road crashes).

A seventh assumption was an original idea to develop a strategy for risk reduction or prevention, targeting human factors in the form of a *TAKE FIVE* checklist of traffic safety (*T5CTS*). Such a checklist might result in less risky attitudes and behaviours in students (this assumption emerged from an idea following my head-on crash and from literature supporting health promotion).

A final assumption was to explore the potential for the arts to reinforce positive learning experiences from the programme and mediate them into a personal code of practice (This was an original idea based on the ways "Arts" can contribute to learning [Dryden & Vos, 1993; Sandor, 1966]).

Once the programme was operating, I could review these assumptions.

3.7. Closing note

In this chapter I have outlined how the *TAKE FIVE* DE programme arose from personal knowledge and experience, observations of DE students, and educational theory. It represented the foundation from which I could explore the implementation process and review my educational assumptions at a later stage. The methodology that I needed to use to structure and monitor the research is outlined in the next chapter.

Chapter 4: Research Methodology

4.1. Introduction

Having reviewed the content of DE programmes, research evaluations and the characteristics of adolescents in Chapter Two, and theories of learning and curriculum development in Chapter Three, I found little guidance for the classroom teacher that would optimise the delivery of an effective programme for DE students. In this chapter I review previous classroom-based DE research then outline the research design and methods I chose and the data I planned to collect to answer the research questions specified in Chapter Two. The research approach that I planned to adopt was action research (AR).

4.1.1. Previous research

The New Zealand Driver Education Investigation Project (Best & Edwards, 1982a) was the only New Zealand research I found with a classroom focus. The research was an exploratory project implemented in several Hamilton schools during 1979-1980 following discussions between MOT and Department of Education. The over-riding objective was "to assist young people to develop an attitude of social responsibility in traffic" (Best & Edwards, 1982a, p. 44). There was a clear pedagogical implication to explore how DE could best be delivered to students as a part of a social studies-liberal studies curriculum.

The research looked at: how schools could best contribute towards traffic education; to what extent the MOT traffic education programmes could be included within the current curriculum; what specific skills, attitudes and needs were already established at age 15, and what was the best means of modifying or reinforcing pre-licensing skills and attitudes.

The analysis of feedback from students and findings relevant for this research showed that:

- MOT traffic educators were seen as irrelevant in school situations, with trust in police diminishing among students of an older age;
- A discrepancy existed between what respondents said concerning the mixing of drinking alcohol and driving, and what was actually being done;
- Differences were likely to occur in driver behaviour reported by individuals and what would be likely to occur in association with their peers;
- There was a need for more research through a Traffic Education Research Institute being set up (Best & Edwards, 1982a).

In addition, Best and Edwards called for a more comprehensive analysis of their research data, further investigation of potential links between driving behaviour and attitude, and further classroom research be undertaken. Specific mention was made of pedagogical needs for:

- coordination of resources, future resource development and production;
- clarification of ambiguous terminology such as *traffic education*, and *road safety*, and of *aims* and *objectives*; and
- support to inform teachers about resources available and how they might be implemented more effectively (Best & Edwards, 1982a).

Collectively, these issues were not a high priority for the Ministry of Transport nor for the Department of Education at the time because of the high costs involved in expanding the research nationally. It was also claimed that too much time was being spent by road traffic instructors (RTIs) on curriculum development, rather than on programme delivery or training for improved pedestrian and cycle skills (Troup, 1992). As a consequence, within a decade, reductions were made in the availability of specialised RTIs who worked alongside schoolteachers in support of traffic safety. When the Ministries of Police and Transport were amalgamated in 1992, through a comprehensive Police restructuring (Troup, 1992), the centrally resourced, school-based traffic education service was also restructured. Traffic safety and education programmes were subsumed within Police and Police Education departments. Specialist Police Education Officers now dealt with drug, alcohol, traffic and personal safety education programmes. No research measuring the impact of these changes on DE was undertaken that could establish what traffic safety needs existed for New Zealand students, and what factors were likely to be an influence on implementing effective traffic safety education programmes.

In summary, no research at the secondary level had pursued the issues recommended by Best and Edwards. Furthermore, New Zealand programmes such as *Roadshow* (Fahey, 1984; Jiggins, 1984), *Drive Plan* (Rice, 1992), and *Caltex 'Star Driver' Programme* (Kirkwood, 1992) were developed without reference to the recommendations made in Best and Edwards' study.

Although concerns similar to those raised by Best and Edwards have been expressed directly and indirectly by a number of Australian and overseas researchers (Horneman, 1993; Job, 1995; Lonero & Clinton, 1996; Rothengatter, 1994), I could not locate any classroom based research in other countries that pursued these issues

further. Job (1995) noted that there was a need for "process research rather than global evaluation" (p. 6). He acknowledged that "research into the process of change may uncover such components and thus provide an invaluable guide to future education and training" (p. 6). Second, he noted that "methodologically rigorous evaluation of current and future courses is essential to knowing the real effectiveness of the courses" (p. 7). While a clear challenge existed for me to address issues raised by these authors, I also found:

- An assumption appeared to exist that a planned programme was sufficient in itself to meet student needs. Factors were not identified that might prompt a teacher to make modifications to a planned programme during implementation.
- Limited reference was made to factors capable of influencing the outcomes of a programme including: the complexity of interactions between teacher and students and the unpredictability and uncontrollability of many factors.
- No mention was made of expectations, perceptions, actions and evaluations of learners and teachers before, during and after programme implementation.
- Little consideration was given to individual differences in the responses of students and a teacher's response to these students.
- Evaluations of classroom-based DE were scarce.
- No instance of collaborative AR involving school students was found.

To address the limitations, I decided to:

1. Adopt a research design and methodology that would allow me to research actual teaching and learning situations during the implementation of a DE programme. It would involve a continuous process of planning, acting, observing and reflecting on processes involved with implementation and the need to modify programme content and methods of teaching during the implementation process if required (research question 1 & 3). I would be able to identify differences between a programme-as-planned and the programme-in action by monitoring teaching and learning situations.
2. Collect a rich array of data to highlight factors capable of influencing programme outcomes (research questions 3, 4, & 5). Data would be both quantitative and qualitative and would be reported in narrative form.
3. Focus on teaching and learning processes before, during and after the implementation rather than solely focussing on summative outcomes (research question 3).
4. Review influences on learning that had not been investigated well in DE research. It would be helpful for me when accounting for outcomes and considering measures that might need to be taken to improve the effectiveness of programmes (research questions 2 & 5).
5. Consult with students and give them the opportunity to contribute personally to the development of an effective DE programme (research question 2).

4.2. Action research : Introduction.

The term "action research" is often attributed to Lewin who was reported to have used it in 1944 (Olson, 1990). Social and collaborative roots of action research (AR) emerging from the research of Collier, a Commissioner of Indian Affairs in the U.S. (1933-45) were also acknowledged. Collier's report of a study to improve Indian farming practice involved the collaborative efforts of administrators, scientists and Indians, in an "action-evoked, action-serving, integrative and layman-participating way of research...[which was] incomparatively more productive of social results than the specialised and isolated way" (Olson, 1990, p. 9).

The *active* dimension of AR is identified within Gregory's (1988) description as a process whereby:

> in a given problem area, research is undertaken to specify the dimensions of the problem in its particular context; on the basis of this evidence a possible solution is formulated and is translated into action with a view to solving the problem; research is then used to evaluate the effectiveness of the action taken (1988, p. xiv).

Other authors (Alcorn, 1986; Carr & Kemmis, 1986; Lieberman, 1986) specify characteristics of problem identification; confirmation of research questions and methods through planning; research of the action; observations of the process; and reflections on the action to create other "self-reflective spirals of cycles" (Carr & Kemmis, 1986, p. 161) either by pursuing the same path or modifying it in some way.

Two features of AR that made it appropriate for this study were its suitability for use in social situations (including education) and its cyclic action and reflection research process. In Chapter One, I referred to relevant statements made by Zuber-Skerritt (1995) that AR is:

- particularly suited to social research in authentic contexts; and is
- able to assist in the pursuit of change in social situations, for testing accountability, for encouraging critical awareness, for self-evaluating and doing research into teaching practice (Zuber-Skerritt, 1995, p. 15).

As a researcher, AR would enable me to:

- operate in a dual role as both a teacher and a researcher (Burns, 1995; Fosnot, 1989; Maxwell 1996; Olson, 1990); and
- examine, evaluate and reflect on practice in the classroom (Alcorn, 1986; Poskitt, 1995).

The similarity of AR to Kolb's (1984) learning from experience model is reinforced through the cyclic nature of AR in which *action* is followed by *research of the action* as a series of continuous cycles. For this reason, AR has had considerable appeal with teachers and others in social contexts who have sought a systematic and dynamic way to improve their practice through progressive cycles of *planning, acting, observing,* and *reflecting*. AR has enabled educational issues to be addressed in such a way that the research can, at times, reciprocally "influence the phenomena being studied during the action research process itself" (Bunning, 1995, p. 8) by offering opportunities for those involved to contribute to the research as well.

A number of steps are consistently described within the AR paradigm (Alcorn, 1986; Carr & Kemmis, 1986; Dadds, 1995; Gregory, 1988; Lieberman, 1986; Wann, 1952; Zuber-Skerritt, 1995):

- Identification of a problem including preliminary data collection, diagnosis and further reconnaissance;
- Determination of focus and methods by planning a strategy for active participation of the participants;
- Implementation of the programme as action, according to the planning carried out.
- Observations of the process which includes the on-going gathering of data; and
- Reflection on information collected, to consider how a further "intervention" might develop during which other, "self-reflective spirals of cycles," (Carr & Kemmis, 1986, p. 161) could be undertaken, either with or without modification.

A characteristic of AR that educational practitioners acknowledge is the connection that can be made between theory, practice and change (Dick & Dalmau, 1997). Zuber-Skerritt (1992) observed that "through systematic, controlled action research...teachers can become more professional, more interested in pedagogical aspects of higher education and more motivated to integrate their research and teaching interests in a holistic way" (Zuber-Skerritt, 1992, p. 15). Theory and practice are closer because there needs to be no separation between the "design and delivery of teaching, and the process of researching these activities" (p. 2). A narrowing of the gap between practice and research (Rainey, 1972) enables the researcher to go beyond pure description of the problem by seeking a theoretical relationship with "what is going on with the phenomena that you want to understand" (Maxwell, 1996, p. 31). AR is, therefore, a systematic method of inquiry, which McKernan (1991) notes can be "carried out by practitioners experiencing difficulties in order to understand and/or solve these problems...[and] improve the human condition" (p. 43).

Furthermore, AR can provide a systematic approach to the collection and interpretation of a variety of data, not "fully detailed in advance" (Bunning, 1995, p. 8). This ability to take account of unanticipated factors and accommodate new ideas gives AR flexibility for use in many contexts. However the uniqueness of a focus on practice in local contexts means that generalisation of findings to more global situations is diminished (Olson, 1990).

One empowering feature of AR, outlined by Dick (1997b) is the opportunity for participants to engage collegially or collaboratively as partners in the research. Data gathering can be undertaken by participants themselves or with the help of others to define their own questions; to pose problems and find answers to questions; to make decisions; and to collaborate as a "critical community". Several authors highlight the importance of a collaborative process (Kemmis & McTaggart, 1988; Olson, 1990) and indicate strongly that social change is difficult to achieve without the collaborative element (Bunning, 1995; Carr & Kemmis, 1986; Harker, 1991; Kemmis & McTaggart, 1982; Oja & Pine, 1989; Passfield, 1991).

However, a number of problems with collegiality and collaboration in AR are likely to surface in situations where research programmes are undertaken within classrooms, which seek to involve students. The professional relationship between teacher and student is characterised by different responsibilities, approaches, perspectives and critical tasks concerning learning outcomes and assessments of them. In spite of these differences, McKernan (1991) promotes the idea that "the study of action and of classrooms is the best way to improve curriculum and develop good curriculum theory" (p. 54). He contends that teachers, whether individuals or in groups, need to become "the researchers of their own practice by adopting an inquiry stance to their work" (p. 54). This is supported further by Duckworth (1987) who advances a model of "teacher-as-researcher" (discussed in more detail later) as a means by which "pre-service and inservice teachers ...[need] to question and research children's understandings of concepts, then reflect on the logic used in reaching such understanding" (Fosnot, 1989, p. 13). A report of a classroom-based AR project by Burns (1995) acknowledged that "action research should not be a solitary experience, but rather a collective undertaking aiming as far as possible for genuine collaboration between teachers and researchers" (p. 12).

In contrast to this, Dadds (1995) acknowledges that "not all action researchers are so fortunate [to have a collaborative resource in their school], so let us not be discouraged from also seeing the value in the efforts of the lone teacher action researchers...their efforts will improve the world in some small way" (p. 160). Such individual AR has also been recognised by Merriam and Simpson (1995) when defining "action research at a practical, local level, [which] would be the equivalent of a study, conducted by a teacher seeking the most effective methods for teaching [English as a second language]" (p. 123). In this case, the authors acknowledge that outcomes will emerge that are of value, potentially for other teachers. Where a collective commitment by all parties, is not possible, Bunning (1995) notes that "an individual researcher-activist" (p. 4) has a valuable contribution to make.

In summary, and of relevance to this study, Beck (1990) postulates that "virtually any aspect of the school or the classroom is open to investigation using the action research model and in every case the result can be further illumination of the teaching-learning process" (p. 103).

4.2.1. Criticism of AR

In spite of the above advantages, some aspects of AR have been criticised. A lack of rigour in the way data are interpreted or misinterpreted (Douglas, 1976; Olson, 1990) can arise from a lack of researcher experience, knowledge, diagnostic and analytical skills that can lead to competing models of truth. This in turn can trivialise the process of AR (Alcorn, 1986) or give it a poor reputation (Swepson, 1995). Rigour can be improved by increasing "the quality of the data collected, and the correctness of interpretations" (Dick, 1993, on line) and through the use of triangulation and dialectic strategies.

The potential for subjective bias (Alcorn, 1986; Bogdan & Bicklin, 1982; Merriam, 1988) exists when a researcher-participant is personally involved with a study. While criticism of this nature reflects a striving for objectivity, Zuber-Skerritt (1992) argues that "there is no objective knowledge of reality...reality can only be known through our constructions which are subject to constant revision; we do not have direct access to an interpretation-free reality" (p. 56). In light of differing viewpoints, the onus is placed on a researcher to gather data appropriate for the focus of the research and from a number of sources, to ensure that interpretations and

outcomes reflect what happened, with whom and to explain what steps were taken in the contexts concerned.

A lack of generalisability of findings may be another criticism targeted at AR. However, Swepson (1995) observes that action researchers make a

> value choice of pursuing situation specific knowledge rather than generalisable knowledge, i.e. it will trade off external validity for internal validity, if necessary. Therefore, [AR] is generally applied to complex, social situations which are a complex set of relationships between indiscrete variables and it is not possible to choose which variables are crucial (Swepson, 1995, on line).

Although there is difficulty in generalising outcomes from one context to another (Alcorn, 1986), it is possible that some degree of generalisation can occur for others in similar or related fields when similarities in contexts exist and vicarious learning experiences are offered by the research and the research process (Merriam, 1988). While the results from positivist research may be generalised more widely, in specific contexts where the control of some variables is difficult, AR is more able to take account of unexpected events and influences that can affect outcomes in local situations.

4.2.2. Action Research and The Present Study

There are several defining features of my use of AR for the purpose of this study:

- Teacher action research (TAR);
- Teacher-as-researcher (T/R);
- A wide array of data;
- An emphasis on qualitative data;
- Concern with triangulation;
- Praxis

I planned to investigate practical problems experienced by teachers, rather than *theoretical problems* defined by pure researchers within a discipline of knowledge (Elliott, cited in Nixon, 1989). My interest in using TAR was related to overcoming practical problems linked to identifying the most effective teaching methods, or confirming strategies to help students with learning difficulties when teaching students about driver safety.

Secondly, I wished to assume the role of teacher and researcher (*teacher-as-researcher* [T/R]) to expand my understanding of teaching DE and learning through systematic classroom research. Although my main focus was on programme

development and implementation, I was also keen to research my own practice using naturalistic, participant-observation techniques (Johnson, 1993). I would draw on a previous AR study in which I explored ways to improve teaching and learning as both participant and musical-director within a music centre (Bruce, 1992).

Third, I planned to collect a wide array of data from students and in particular qualitative data because I wanted to understand the perceptions, thoughts and experiences of students, and in conjunction with my own thoughts, to determine what situational constraints might shape the inquiry (Denzin, 1994; Maxwell, 1996; Merriam, 1988). To ensure the trustworthiness of data, I planned to triangulate quantitative and qualitative data from questionnaires, diary entries and class-work with my observations and diary entries and summative feedback from students. I was keen to use an "emergent design...(which would require) new questions" (Maykut & Morehouse, 1994, p.44) to be asked as the study developed.

Fourth, to reduce the potential for subjective bias, because of my need to be participant and researcher, I planned to create a dialectic framework in which theory and practice could be examined and integrated within my analyses. On occasions I might share concerns in the research with *critical friends* / teaching colleagues as further support for my analyses and the decisions I would need to make.

Fifth, the opportunity existed for *praxis* to occur; this reflective process allows new insights to be incorporated within the research to further inform and "influence the phenomena being studied during the AR process itself" (Bunning, 1995, p.8). Praxis would allow me to incorporate new ideas into the research.

AR would assist me to explore the research questions by helping me to:

1) Identify the needs, review teaching and learning processes and evaluate the outcomes from activities designed for the benefit of students and safety.
2) Explore whether students as collaborative participants would consider taking ownership for the problem of adolescent traffic safety, or by using AR would engage in a problem-solving approach to improve their personal levels of safety.
3) Develop an exploratory case study to understand prevailing student perspectives including different roles I would take as teacher and researcher.
4) Assess what teacher attributes were important for effective DE teaching and learning.
5) Confirm what factors contributed to programme effectiveness for students.

Finally, it would be possible for other persons interested in DE in the classroom to explore, view, and rationalise my T/R position from my narrative descriptions.

4.2.3. Case Study

Teacher research often includes case study methodology (Johnson, 1993). It provides a framework, which allows for events and other phenomena to be studied sequentially as they occur. I was looking for a methodology that would allow me to describe contextually based phenomena as they occurred in practice, which could also take account of changes in student perceptions. Compared with other research methods, Merriam (1988) notes that a case study methodology, is:

- more concrete and experiential, vivid and sensory, than abstract knowledge relying heavily on first-hand observation and description, allowing readers to visualise factors involved and to understand them in context.
- more contextual than abstract formal knowledge, reflecting the nature of the environment, the situation and actors in the drama in which the action occurred.
- more developed by interpretation which can lead to generalisations from new data, when comparing previous or existing data.
- based on reference populations, which allow for knowledge, emerging from the case study, to be generalised to some degree to other reference populations (Merriam, 1988).

An important feature of this case study was to define a *unit of analysis* (Hitchcock & Hughes, 1995; Merriam, 1988). A "unit of analysis [establishes] the boundaries of the inquiry as a whole" (Merriam, 1988, p. 45) and in this study it would necessarily be complex because of the range of activities being researched. To begin with, several analyses would occur simultaneously; programme development, implementation processes, student characteristics and their responses and programme effectiveness.

Second, it would be a *multicase study* involving groups of students from two schools. While I had targeted two schools principally to augment participant numbers, I also wanted to maintain and record contextual differences where they were appropriate and necessary. Each school context would be unique in terms of programme delivery, reactions to the programme and the different perspectives of students.

Within a case study paradigm, Yin (1984) distinguishes three types that were applicable to this study, *exploratory*, *descriptive*, and *explanatory*. I would focus initially on *exploration* to distinguish what factors were important within a DE programme for student safety. An *exploratory* case study is often used, as a pilot

study, to highlight and identify key factors before other more detailed work can begin. This would be the case with the *TAKE FIVE* programme.

A more *explanatory* focus would occur during the second implementation, as factors contributing to effectiveness and patterns in student responses from the first implementation were recognised and confirmed. Case studies are particularly suited to situations where it is impossible to separate a phenomenon's variables from contexts (Merriam, 1988). Therefore, I needed to account for such anticipated and unanticipated phenomena and explain how changes and refinements might need to be incorporated into a modified programme for a further implementation (Duckworth, 1987; Fosnot, 1989; McKernan, 1991). As a result, outcomes from the study would have greater credibility with practising DE teachers and traffic authorities stemming from the practice in different but similar contexts.

A *descriptive* case study provides a narrative of a social situation. This approach would apply through detailed personal descriptions of theories in action, insights into teaching and learning and the implications that lay behind activities, events, and reports of student responses. From this study, unique factors in each context (Hitchcock & Hughes, 1995) also descriptions of changes I made and reasons for making them would be recognised as the research proceeded.

With a greater emphasis on the concrete and contextual elements, limitations of the case study can sometimes be revealed when reported data are only as comprehensive as the people who report or interpret them. Therefore, data from case studies need to be considered in the light of possible omissions, bias, and selective foci. Accordingly, case study outcomes also have limited generalisability due to the complex set of variables that are unable to be controlled in a natural context.

However, a case study's strength in preserving the authenticity of real-life situations is a strength of the design which is "particularly appealing for applied fields of study such as education" (Merriam, 1988, p. 32) as it offers readers vicarious insights and illuminated meanings while advancing knowledge in the field of study.

4.2.4. The Narrative

The narrative is a way of structuring texts, thoughts and language (Bruner, 1996; Engel, 1995; McNeil, 1996; Nelson, 1989, Plowman, 1996) which "aids reconstruction, retrospection, prediction and memory as well as motivation" (Plowman, 1996, online). Knowledge and experience central to the processes of

teaching and learning can, therefore, be shaped within a narrative. Riesmann (1996) notes that "as realist assumptions from natural science methods prove limiting for understanding social life, a group of leading US scholars from various disciplines are turning to narrative as the organizing principle for human action" (p. 1). A complementary link between the narrative and AR can be seen in Beattie's (1995) description of curriculum reform which occurs "through reflective practice and teacher growth" (p. 7) which can:

> allow the processes of teaching and teacher learning to speak for themselves and, by interpreting and making meaning of what is spoken, to gain new understandings and insights into both...[and can demonstrate]the ways in which the personal practical knowledge of the teacher, a knowledge that is cognitive, emotional, moral and aesthetic, guides and determines curriculum decisions (Beattie, 1995, p. 7).

As with the descriptive case study mentioned, a narrative provides a glimpse of authenticity through a narrator's account of events and the people concerned. Clandinin (1995) notes, within an educational framework, that "classrooms...[are] a special place within the professional knowledge landscape... where teachers teach and where curriculum is made" (p. 12). Within this professional landscape, they claim "our best understanding of teacher knowledge is a narrative one" (p. 12) which is built up of "narrative knowledge in practice" (p. 12). When teachers tell and retell their stories, professional knowledge of practice is connected with reflection which is described as a basic drive where "one lives, looks backwards and forward and then lives again...[therefore] stories of professional practice are stories of relationship and they are stories of thinking again" (p. 156). In this way a teacher's narrative becomes the study of the way students experience their world and what a teacher does to encourage learning.

A narrative can generate and convey information and knowledge between people and can also provide "a solution to the problem of how to translate knowing into telling" (Scholes, 1980). Gudmundsdottir (1995) notes that through the use of narrative, an understanding is gained of "the social context in which a narrative is related, the narrator's reason for telling it, the narrator's narrative competence, and the nature of the audience" (on line).

According to Chatman (1978) there is a duality of *story* and *discourse* in a narrative. The *story* aspect includes the events, characters and settings that constitute the *content* of a narrative. While such information may be sufficient to gain an

understanding of events and sequence, more is required of the narrative in an educational sense. Such a *discourse* not only needs to involve the narration of events but also needs to include discussion of other factors. These will include possible meanings and interpretations made by participants and the narrator, the style of presentation, and what formats the narrative might take. In terms of this study, the dual perspectives of teacher and researcher were likely to contribute to a greater appreciation of a *professional knowledge landscape* of DE.

Being a narrator offered me the opportunity to provide a personal and sequential account of the professional practice of each implementation. As a written text it would allow me to:

- describe what happened in term of the participants, events and the resources used;
- describe how my understanding of theory linked to practice, as I designed learning experiences for students. *Theory in action* had the potential to help me improve my practice of teaching and advancing the cause of safety;
- portray for the reader, the processes of reflection, and how my personal assumptions might need to be reviewed and reconsidered throughout the implementation process;
- provide an account of a curriculum development process in classroom contexts; and
- present a discourse about the factors that related to programme effectiveness and how it could be improved.

4.3. Closing note about methodology

AR would assist me as a *lone researcher* (T/R) to develop a multicase study in two contexts focusing on the development, implementation and evaluation of the *TAKE FIVE* DE programme involving two implementations. Within each implementation, AR would assist me to critique activities designed for students as well as my involvement in the research as a DE teacher.

A sequential overview of the research would be contained within a narrative report of the study. This would highlight programme delivery in the classroom and in particular the processes of developing, implementing, reviewing and refining teaching and learning activities developed for DE students who were transition students. My use of AR and inductive approaches focussing on situations and the people concerned would also be contained within the narrative. The diversity of meanings emerging from students and my reporting of them would offer readers the "promise of making significant contributions to the knowledge base and practice of education" (Merriam, 1988, p. xiii) in areas that few DE studies had previously explored. Accordingly the narrative would offer vicarious insights into *teacher roles*, *curriculum development*

and *researcher* roles within the research. I introduce next the contextual parameters and instruments developed to gather data for the first implementation.

4.4. Schools and participant selection

I invited DE teachers (DETs) in three local secondary schools (coeducational, girls' and boys' single sex schools) to be involved in the research in late 1995. My limit of visiting two schools in a day restricted me to confirm one coeducational and one single sex boys' school. Thus I could compare risk-taking between students in a coeducation and a single sex boys' school given the propensity for New Zealand males to have higher levels of risk compared with girls (Midland Health, 1996). Each school had a DE programme for students and a DET responsible for teaching DE. I needed the reciprocal support of DETs, as some elements of the *TAKE FIVE* programme were little more than ideas to begin with.

With regard to ethical concerns, I requested official permission from each principal to gain access to DE students in each school, having first received permission and negotiated the programme with each DET. Once I had the support for both study and programme, I organised my timetable around my need to travel, to take account of each school's timetables, lesson durations and commencement times. Other ethical matters to be approved at this point were: that proposed DE content corresponded with the course DETs had already offered students, that students would not be disadvantaged by their involvement, and contingency measures for counselling support be available for students if necessary when studying serious crashes.

I planned to collect and pool data from both contexts to identify overall patterns in teaching and learning rather than isolating each class population separately. However, I also planned to preserve individual records of students to compare risky responses from students in the boys' school with LTSA crash statistics. Other data would be analysed for behavioural patterns within and between schools.

I planned not to enter into a team teaching relationship with the DE teacher in School A (DET: A) to maintain a consistent delivery of the *TAKE FIVE* programme in each school context. DET: A was interested in new ideas and ways of presenting DE material and planned to attend each class with me as an observer and critical colleague. The DE Teacher in School B, (DET: B) was happy for me to become a DET in my own right and allocated a DE class to me, but did not plan to attend the class.

The first implementation was planned to run from July to September in 1996. The schools chosen are described next.

4.4.1. School A Background

School A was a coeducational high school with 900 students offering two elective senior modules of DE available to students in Years 11, 12, and 13. The first module, *Driving Skills*, was offered in Term One and Term Two and *Street Skills* was offered in Terms Three and Four. Each module was delivered in 50-minute periods (lessons) five days a week for one term of ten weeks, a total of 40 hours. *Driving Skills* was a theory-based programme culminating in students sitting a practical restricted driver's licence test. It was a prerequisite for a second programme *Street Skills* which provided students with safety information concerning vehicle dynamics, crash factor analysis and strategies for minimising driver risk. Neither programme involved practical driving experience, as they were classroom-based, but the first programme assisted students to get a provisional learner licence so that they could begin to learn to drive on roads (accompanied by a licenced driver over 20 years).

The DE Teacher (DET) in School A had been involved in an earlier DE research project during 1979-1980 (Best & Edwards, 1982a) and confirmed his interest in "another opportunity to consider a different approach to DE." He would attend each class, and the first implementation was planned for Term Three of 1996. The proposed content of the *TAKE FIVE* programme followed the *Street Skills* module as, it was assumed, many students would have obtained their learner licences and had gained some familiarity with driving already.

4.4.2. School B - Background

School B was a single-sex boys' school of 1150. It had a scheduled DE programme and an experienced DET (as a Form 5 Dean) in charge of delivering the programme to senior students in Years 11, 12, and 13. DE was offered as part of a "life-skills" option course for an hour-long period (lesson) on four days a week for ten weeks (40 hours). As with School A, it was essentially a classroom-theory-based programme but it did include a supplementary practical component for students with a licence. They drove on a *two-up* or *three-up* basis (two or three students accompanying a driving instructor with one of the students driving). As a qualified defensive driving instructor, the DET was also able to offer students a theoretically based defensive driving option if they wanted to reduce the period of restriction on a

restricted or provisional driving licence. The DET was supportive of my research and supplied me with a group of students as a class *in their own right*. The DET tailored this class so that "stroppy students", likely to "interrupt the flow of events", could be removed if necessary. As a result, I realised that the implementation would be different in each school but this was beyond my control. However, I would become a "DE teacher" in my own right.

School B provided 18 students drawn from the *Life Skills* elective for four days a week. Lessons were an hour long and were scheduled to begin in Term Three of 1996. Permission to conduct the research in the school was given informally by the principal, and the DET teacher would not be attending classes.

4.4.3. Participants

I restricted the participants in each school to students who had elected to take DE as a subject and who were invited to take part in the research by their DET. The maximum class size was 26 students.

In School A (a co-educational school) a total of 26 students were involved; 10 female and 16 male. Class level distribution consisted of:

- 17 Year 11 students (ethnic grouping: Maori [New Zealand]-2, European-13, Asian-2);
- 8 Year 12 students, (ethnic grouping: Maori-4, European-4); and
- 1 Form 7 Year 13 student who was Maori.

The DE class in School B consisted of 18 male students. There were

- 13 Year 11 students (ethnic grouping: Maori-Polynesian-1, European-11, Indian-1);
- 5 Year 12 students (ethnic grouping: Asian-1, European-4); and
- No Form 7 (Year 13) students.

4.4.4. Data gathering instruments - Questionnaires

I designed several questionnaires and data collection methods, using criteria, outlined in Figures 4.1 – 4.5 to collect a mix of qualitative and quantitative data from DE students. The mix of data was planned to heighten internal validity and analytical objectivity (Hitchcock & Hughes, 1995; Merriam & Simpson, 1995) through triangulation.

Questionnaire 1a (Q1a) Pre-implementation I (Baseline data)

Quantitative and qualitative data were to be collected from the pre-implementation questionnaire (Q1a), and its repeat as a post-implementation questionnaire (Q1b)(see Figure 4.1 & Appendix G).

Questionnaire 1a (Q1a) Pre-implementation I (Baseline data);
Data collected: (a) Baseline data & (b) Follow-up data – (1996 & 1997)
Student age / gender / ethnicity / licence status.
Survey of driving without a licence.
Survey of the importance of having a driving licence.
Rating of driver-related issues (speed, alcohol, courtesy, seatbelts)
(3 point Likert-type scale: agree / sometimes agree / disagree)
Open questions dealing with miscellaneous issues / opinions like:
- course expectations,
- doing one's best,
- identifying a likely source of national pride,
- courtesy / abuse.

Data gathering method: Questionnaire - written responses
Closed questions - concerning personal details and history of driving.
Open questions - the value of a driving licence, opinions on non-compliance.
Data analysis:
1 Frequency distribution of closed responses on a 3 point Likert type scale.
- potentially dangerous / moderately safe / safe

2 Coding of qualitative responses:
either a) cluster analysis for patterns and/or
b) allocation of keywords

Considerations:
DET approval sought and permission given.
Language level simple.
Confidential - no information to be divulged.
Codeable responses.
Some responses were open to subjective interpretation.
General questions for possible use for other information (possible links to lifestyle etc.) or programme activities / content.
Primary focus on dangers inherent within traffic.
Use of data for measurement of progress and personal reflection (formative and summative).
Duration between delivering Q1a & Q1b = 40 hours (10 weeks).
Comments:
Questionnaire duration: 15 - 20 minutes for school students.
Individual responses sought.
Ethical needs for student support prepared and presented verbally.
Purposes:
to establish relative position of student on danger / safety continuum.
to confirm range of personal perceptions of safety / danger.
to enable formative (process/product) and summative assessments to occur.

Figure 4. 1 Questionnaires 1a & 1b (Q1a& Q1b) Pre & Post-implementation (Baseline & Follow-up) data.

I planned frequency distribution on a three point Likert scale to analyse quantitative data according to criteria established within each questionnaire. I would also analyse qualitative data by clustering student responses according to keywords and safety concepts. Where possible I would arrange these data on safety-risk continua for further patterns and trends, and as formative and summative assessments. The questionnaire, Q1a, would be re-administered as Q1b, after ten weeks.

Questionnaire 1c (Q1c) Post-implementation I (Evaluation questionnaire).

This questionnaire, using criteria in Figure 4.2 (see Appendix L), sought student feedback from a number of areas in the course. It would provide feedback about me as the teacher, and some summative data about the programme and the DE activities.

Questionnaire 1c (Q1c) Post-implementation I (Feedback - Evaluation questionnaire).
Data collected: Feedback / Evaluation questionnaire – (1996 & 1997)
Student ID.
Recall summary of key points through cloze activity (seven words).
Survey of the importance of having a driving licence.
Ratings of driver-related issues (speed, alcohol, courtesy, seatbelts
(3 point Likert-type scale: agree / sometimes agree / disagree)
Open questions dealing with miscellaneous issues or opinions on:
- course expectations
- doing one's best,
- identifying a likely source of national pride
- courtesy / abuse

Data gathering method: written responses
Closed questions - recall points made during the programme.
Open questions - the value of a driving licence, opinions about non-compliance
Recall summary of course content and student understanding.
Data analysis:
1 Frequency distribution of closed responses (3 point Likert-type scale).
- potentially dangerous / moderately safe / safe

2 Coding of qualitative comments in support of open questions:
either a) cluster analysis for patterns and
or b) allocation according to keywords.
Considerations: (formative assessment - student learning & teaching)
Student feedback concerning programme delivery and content:
Activities / guest survivors / guest adults / driving task model,
Course approval / helpfulness,
Enjoyment / least enjoyable parts,
Suggested improvements,
Using data for reflection.
Comments:
Duration: 30+ minutes.
Individual responses sought.
Purposes: (formative and summative assessment).
Obtain student feedback about, activities, programme, and teacher;
Ascertain progress made by the students; and
To see what suggestions might be offered for improvement / future course/s.

Figure 4.2 Questionnaire 1c (Q1c) Post-implementation I (Evaluation questionnaire).

Questionnaire 2a (Q2a & Q2b) Pre & Post-implementation (Baseline & Follow-up data)

These questionnaires were planned for the second implementation in 1997 and would be the same as Q1a and Q1b except for the use of a five-point scale Likert - type scale (Agree / mostly agree / sometimes agree / seldom agree / disagree).

As it transpired, because of time constraints in both schools, the second implementation was shorter in duration in each context. The DETs were unable to free students to the extent they had during the previous year because they were required to teach lessons for national certificate *Unit Standards* in 'Driving' which had been incorporated into each schools DE programme for the first time in 1997. In School A, the second implementation was reduced from 40 hours to 29 hours covering six and a half weeks while in School B, it was reduced even further, from 40 hours to 14 hours covering seven weeks. Following completion of the second implementation, the feedback questionnaire (Q1c), specified as Q2c, was repeated.

Questionnaire 2c(Q2c)`Post-implementation II (Evaluation questionnaire)

This questionnaire was the same as Q1c and was completed in both contexts as a formative assessment of teaching/learning and a summative assessment of levels of student safety achieved as a result of programme implementation.

Questionnaire 2 d (Q2d) Post-implementation II (Application questionnaire)

The criteria for this questionnaire are outlined in Figure 4.3. Because of poor attendance on the final day, Q2d (see Appendix M) was used only in School A.

Questionnaire 2 d (Q2d) Post-implementation II (Application questionnaire)
Data collected: Summary application questionnaire - 1997
Student ID.
Review of 10 authentic traffic scenarios.
Data gathering method: written responses
Open questions - seeking student responses.
Data analysis:
Coding of qualitative comments in support of open questions:
subjective ranking (3 point Likert-type scale).
• potentially dangerous / moderately safe / safe
Considerations:
Formative assessment - student learning and teaching
Application of teaching and learning knowledge.
Summative assessment of programme.
Using data for reflection.
Comments:
Duration: 30+ minutes for school students.
Individual responses sought.
Only presented to School A (insufficient time available in School B)
Purposes:
To ascertain what suggestions might be offered for future course/s; and
To enable formative (process/product) and summative assessments to occur.

Figure 4. 3 Questionnaire 2 d (Q2d) Post-implementation II (Application questionnaire).

4.4.5. Other Instruments - qualitative data

Other qualitative data were collected from two principal sources: the students and from me, in my role as the teacher/researcher.

Student diaries

I collected and recorded written data from student diaries on a daily basis (Appendix I) using the criteria outlined in Figure 4.4. The data would represent general classwork, student ideas and opinions, written responses, and descriptions of activities.

Data collected: Student diaries 1996 & 1997
Student ID.
Classroom exercises.
Student ideas and opinions.
Responses to questions.
Data gathering method: written responses
Open questions - seeking student responses/opinions.
Data analysis: (formative assessment)
Regular and on going coding of selected comments for indicators of student positions on safety - risk continua.
• dangerous / high risk – safe/low risk.
Indications of understanding / lack of understanding.
Considerations:
Monitoring levels of work consistency.
Estimates of successful teaching and learning and knowledge retention.
Using data for analysis and reflection.
Comments:
Duration: daily records collected for marking.
Individual responses sought.
Purposes:
To encourage regular effort from students; and
To provide a consistent level of work.

Figure 4. 4 Qualitative data: Student Diaries

Researcher diary

I kept a daily personal diary as a T/R (Appendix J) using criteria outlined in Figure 4.5. Data from this diary would include daily log information, including personal observations, my reflections on action, student ideas, problems and opinions, and ongoing planning, so that I could track changes that I felt were necessary. My diary would also contain observations about students' reactions and reports of the process of implementation that would eventually form the basis for a narrative report of the study, bearing in mind ethical considerations around anonymity.

The contributions teachers make in the delivery of a DE programme have often been ignored or have been treated as a universal given in DE research. The lack of

mention has meant that vital information was not available concerning students' preparedness or ability to accept and process curriculum content, formative assessments of educational processes and what activities in a programme might need to be modified. Analysis of written and observational data would help me to draw conclusions about teaching and learning and what functions were required of a teacher as a part of that process.

Data collection: Researcher diary entries - 1996 & 1997
Daily log-type information
Personal observations.
Reflection on action.
Student ideas and opinions.
Ongoing planning ideas.
Classroom discussion.
Data gathering method: written entries
Diary records entered daily on the computer.
Data analysis: (predominantly formative assessment)
Reflective thought involving praxis
Critical reflection on entries.
Some collegial verification.
Considerations:
Maintain a consistent view of each classroom context.
Estimate previous and present knowledge/teaching/learning development.
Using data for reflection.
Comments:
Duration: daily marking of student diaries and personal diary log entries.
Purposes:
To record observational data for reflection, categorisation and analysis;
To use as a basis for planning and other action research cycles; and
To use as a basis for a narrative of the process of implementation.

Figure 4. 5 Qualitative data: Researcher Diary

4.4.6. Analysis of data

I planned to analyse quantitative data from Q1a, Q1b and Q1c using a three point Likert-type scale. In addition I planned to group written responses about particular issues on a continuum from *greatest safety* to the *greatest danger*. Student responses from the initial questionnaire (Q1a) would be compared with follow-up responses made when the questionnaire (Q1b) was repeated at the end of each implementation.

The learning outcomes specified in Chapter Three provided criteria against which I could measure student learning. Assessment of student progress would also be made by viewing student responses and diary entries alongside these learning outcomes. Where possible, I could also analyse student responses into simple

categories along safety – risk/dangerous continua (very careful - mostly safe - risky/dangerous) where I could track movement of student responses from the outset.

In terms of programme effectiveness, my personal diary notes would provide an indication of the teacher perspective. I planned initially to observe closely how lessons proceeded, what content was covered and to reflect on the range of student responses. I would observe the range of student behaviours and a feedback questionnaire distributed at the end of each implementation would provide further data to indicate whether the programme met students' expectations, whether they enjoyed the programme and whether it was of value to them. I was also interested to know whether the programme structure of four phases of knowledge development (*analysis, confirmation, synthesis* and *application*) was an appropriate structure for the programme.

4.5. Closing note on methods and methodology

In this chapter I have described my choice of methodology for the research. A design using AR would assist me to explore the implementation process of a DE programme in naturalistic settings. Qualitative data from a range of student and teacher sources would give me authentic insights into situational and social constraints, present in classrooms, that can also act as barriers to learning.

AR is an emergent, situation specific methodology that could allow me to develop, implement and monitor the *TAKE FIVE* DE programme systematically so that teaching and learning processes could be closely scrutinised through regular cycles of planning, acting, observing and reflecting. The research instruments were developed to enable me to collect a range of qualitative and quantitative data. The study would enable me to review content more objectively and ascertain what teaching and learning strategies were successful with students and what changes might be required. The instruments for data gathering included baseline and post-implementation questionnaires, a student feedback evaluation questionnaire, an application questionnaire and student and researcher diaries.

In the next chapter, I provide a narrative account of the first implementation and report on teaching strategies and learning activities in relation to the research questions outlined in Chapter Two.

Chapter 5: The First Implementation

5.1. Introduction

In this chapter, the first three weeks of the *TAKE FIVE* DE programme are reported. As indicated in Figure 5.1, I required two cycles of action research (AR) to manage and report the first implementation as a whole in 1996. A further cycle of AR was necessary to cover the second implementation in 1997. I found, as Dick (1993) intimates, that AR was messy and difficult to report because of the need to provide a compelling justification for what is done and "tends to take more space to report" (Dick, 1993, online). This was particularly so in this study because I undertook a comprehensive review of the implementation after only three weeks concluding the first AR cycle prematurely. The narrative of the first implementation continues and concludes in Chapter Six, which also represents the second cycle of AR.

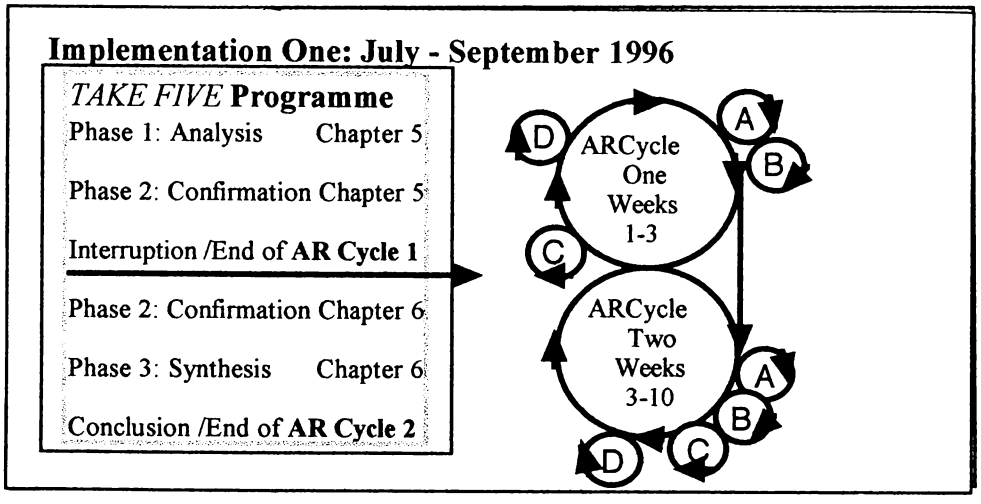


Figure 5. 1 Implementation One – Programme Phases and Action Research Cycles.

I begin the narrative by describing the classrooms I worked in, the participants (including their views about aspects of driving) and my planned role within each context, which corresponds with the *planning* stage of AR. I then report *action*, *observation* and *reflection* stages associated with my implementation of several classroom activities, which are represented by small numbered AR cycles in Figure 5.1. I *reflect* on the initial assumptions I based the programme on as a part of my summary of the first three weeks in both schools. In keeping with the *exploratory* nature of the study, the narrative becomes more discursive as I reflect on events, behaviours, actions and identify underlying patterns and currents in relation to the

five research questions which I used to structure the narrative. This chapter therefore covers the *analysis* phase of the *TAKE FIVE* programme, the beginning of the *confirmation* phase and the first large scale cycle of AR.

5.2. First implementation : Background and Contexts as at July 1996

5.2.1. Classrooms

Having described the school contexts in Chapter Four, I now describe each of the classrooms. The DE room in School A (co-educational) was a pre-fabricated classroom with a lockable storage area containing DE resources. These included laminated sets of driving licence questions, a class set of the *Road Code*, a set of the Drive Plan programme units, an overhead projector and a video system for use in the classroom. There were eight large tables around which four to five students sat on high stools causing several to have their backs towards the instructional area.

The DE classroom in School B (single-sex boys' school) was a similar sized classroom with storage for laminated sets of driving licence questions, a class set of the *Road Code* and other traffic-related resources. The classroom contained desks and chairs grouped similarly to School A in fours, fives or sixes.

5.2.2. Students

The 26 students involved in the research from School A, numbered 10 females and 16 males from Year 11 (Maori-2, European-13, Asian-2); Year 12 (Maori-4, European-4); and Year 13 (1 Maori student). In School B, 18 students were involved from Year 11 (1 Maori-Polynesian, 11 European, and 1 Indian) and Year 12 (1 Asian, and 4 European).

The DETs in each school introduced me to their students as a visitor interested in adolescents and in DE. When introduced, I told the students that I would like to gather their ideas about driving and driver education and that I had developed a questionnaire for this purpose. I acknowledged that they were an important group of drivers and I invited them "to help me with my interest in DE and to learn more about them as learner drivers". I then distributed the baseline survey questionnaire that I had prepared for them (Q1a, Appendix G).

Once the students had completed the questionnaire in each school, the DETs and I invited each student to continue their involvement in further research with me. Following a classroom discussion based on a prepared invitation in which I outlined

who I was, what I planned to do and what I was requesting from them (see Appendix H) and other ethical matters, all students gave their consent following my reassurance that the courses would cover similar material but in a slightly different way.

In School A, students revealed that they wanted a driving licence to be independent (five), and to be able to drive (ten). Eleven students had no licence yet and indicated that this was because they lacked finance, were not ready, or did not need one. Two students had failed the initial learner written-oral test in the previous *Driver Skills* programme and wanted to have another opportunity to sit for the test. Similar reasons for wanting a driving licence were given by students in School B: to be independent (five); to be able to drive (four). Reasons for nine students holding no licence included lack of finance, they were not ready, or did not need one.

Licences held by students in School A included: one with a Full Licence, one with a Restricted Licence, twelve with Learner Licences, and eleven with no licences. Licences held by students in School B were: one with a Full Licence, two with Restricted Licences, and five with Learner Licences.

Nearly a third of students from School A had reported driving without a driving licence, a similar number to responses from a DE class surveyed in the same school during the previous year (see Appendix A). Another third, who claimed that they did not drive without a licence, knew of people who drove without licences. Only eight out of the twenty-five students were unaware of people driving without driving licences. Four female students and seven male students had reported driving without a driving licence in School A, which contrasted with the level of compliance in School B. Only one student out of seventeen in School B had reported driving without a licence and from that class, only five students knew of people who had driven without a licence. Traffic statistics in the years 1994–6 showed consistently that males were likely to exhibit higher levels of risk-taking than females (LTSA, 1994a; 1995b; 1996). However, in the case of the first questionnaire, the reported non-compliance rate of five percent for males driving without a licence in School B was much lower than the forty percent of females driving without a licence in School A.

I noted that three quarters of all students placed a high safety value on having a driving licence. Their views were supported by statements like: "It is the law - you might kill someone if don't know how to drive (properly)", "Important to know how

to drive properly", "So you know they are a qualified driver", "It proves they know road rules". However, close to one quarter of the students were not convinced of its importance, especially if they could drive already. For them, a licence was: "not very [important], if I can drive safely, it should be legal", "Just a piece of paper saying you can drive", "Not very [important] because I can drive fine". For others, the importance was not for safety purposes but rather "so you don't get in trouble with the police", and "you can go anywhere and not have trouble from the 'pigs'". Eighteen out of the 42 students wanted "to obtain the next level of licence" but I had agreed with the DETs that this would not need to become a part of the study. Students who did not mention wanting to get a licence just wanted to "be safer drivers".

Further features of students' responses to this questionnaire are reported later. At the outset of the study, it was obvious that some students in School A showed a higher level of risk-taking, in relation to licence regulations, compared with students from School B. I wondered whether this pattern was likely to continue.

5.2.3. The teacher

As described in Chapter Four, I did not enter into a team teaching relationship with the DE teacher in School A (DET: A) to maintain a consistent delivery of the TAKE FIVE programme in two school contexts. DET: A became an observer in the class and acted as a critical colleague at times. In School B, the DE teacher in School B (DET: B) did not attend the class therefore I became a DET with a DE class of my own.

In the following section I use the research questions as a framework for my description, analysis and discussion of the implementation of the learning activities that I had planned to reduce risks for adolescents. Therefore, this section represents the *action, observation* and *reflection* stages of the first major cycle of AR.

5.3. TAKE FIVE DE Programme in operation - Phase 1 : Analysis

Research Question One:

What knowledge, skills and attitudes are necessary for adolescents to be safe on the road?

The first activities that I designed for the programme were intended to help students acquire knowledge, skills and attitudes through a process of analysis that I assumed would help adolescents to be safe on the road. I hoped that from my

observations of their responses I could assess whether the students considered the activities and learning outcomes were worthwhile and important.

So I continue the narrative of this phase by recounting, from a teacher and students' perspectives, the introduction of several activities. The implementation of each activity, and subsequent observation and reflection, represented a self-contained AR cycle within the larger AR cycle (see Figure 5.1). I later retrace my pathway over the activities and present a more reflective, discursive and critical account, highlighting the implications of student actions and reactions for each research question.

I used the same programme in each class and provided photocopied task sheets and overhead transparencies as the primary resources for students to work from. Each student was required to have an exercise book as a student diary in which to record class work. I would collect them on a daily basis to monitor student progress and gather data from.

5.3.1. Activities involving reality activation

Reality activation activities, as explained in Chapter Three, called upon students to work firstly from their own knowledge, personal experience or imagination and then explore the *realities* of road trauma, at a deeper level than is offered by a newspaper report. I could not find the level of activation I required in existing DE resources. I used authentic and topical scenarios as a basis for *reality activation* tasks within activities that were taken from numerous newspapers and magazines. They were inexpensive resources and I did not have the funding for expensive resources. As explained already, to monitor for effectiveness I reviewed all activities (identified by capital letters in Figure 5.1) as small self-contained AR cycles within a larger AR cycle.

A Newspaper article - first activity

This first activity was based on a recent newspaper report about a fatal head-on crash involving a honeymoon couple. The tasks were to:

- Explain the possible injuries that they could have sustained as the surviving driver.
- Explain the possible causes of the crash in question.
- Imagine being one of the injured couple writing to a parent or relation explaining what had happened.

The first task was a group exercise designed to alleviate anxieties students might have after completing the baseline questionnaire. Students did not have diaries to record their responses in at this stage.

> I divided the class into six groups...Once an initial anxiety of being moved from their mates had passed and they got into the activity of listing the possible causes of the crash in question, there was quite a noticeable change in the feeling of the class from suspicious caution to more relaxed involvement and cooperation (Researcher diary, School A, [RD: A] July 17, 1996).

The majority of answers from students in both schools "demonstrated a realistic sense of imagination and a good understanding of the possible implications of a crash" (RD: A, July 17, 1996). In School B, I noted that the answers "showed a wide range of ideas with imagination and a realistic understanding of the possible implications of a crash" (RD: B, July 17, 1996). The range of injuries they collectively described included head injuries, leg injuries, whiplash, concussion, shock, broken collar bone, cuts and bruising, injuries to the upper body, and a smashed up knee (RD: A, July 17, 1996). Their suggestions of causes of the crash were also credible and varied: "broken steering rack, tyre blowout, adjusting the radio, under the influence of alcohol or drugs, falling asleep, poor vision / eyesight, distraction, tiredness, road conditions, worn tyres / brakes, talking, speed, icy road conditions" (RD: A, July 17, 1996).

The *reality activation* dimension applied more to the third section of the activity when students were given the task to imagine role-playing "one of the injured couple, by writing to a parent or relation explaining what had happened" (RD: A, July 17, 1996). I wondered whether students might identify closely with the victims much in the way world-renowned drama teacher and educator Dorothy Heathcote advocated the use of *improvisatory drama* in her film "*Three Looms Waiting*". Her idea was to use authentic situations and stories to encourage students to *think on their feet*, to develop original and credible ideas and *imagine* being a part of the original event or action rather than being restricted to reading someone else's lines in a book.

I was looking for higher levels of thinking (Newmann, 1990) that verified more than knowledge of the implications following a crash and showed whether students could identify realistically with traffic situations and describe credible outcomes. The

exercise gave students an opportunity to reflect on their awareness of potential dangers in traffic. Most of the responses from students in School A showed few details about what could have happened and little evidence of personal connection with the horror and trauma:

> • Me and Janet [sic] have been in an accident... both of us are OK but Janet has a leg injury. A car came on the wrong side of the road and hit us. The passenger died. We will be out in about a month - we're getting transferred to Waikato tomorrow (RD: A, July 19,1996).

The above level of response detailed, only vaguely, descriptions of an injury to someone else (the partner most usually and not to themselves), a possible cause (mainly attributed to the other driver) and an outcome that reflected little more than was already published in the report. This contrasted with the type of response from a few students, who alluded to longer-term implications of the crash and included their personal feelings.

> • Dear Mum and Dad, Michael and I have been in an accident on our way to Taupo. We've both been seriously injured, and they think that Michael will be in a wheelchair for six months. I am worried how this accident will affect our future and our marriage will be very stressful and we will need your support (RD: A, July 19,1996).

A small number of responses failed to give details about what happened as requested in the question. However, the exercise was worth keeping and developing further. I envisaged that interviews with survivors of road crashes might alert students to the implications behind crashes more dynamically than several of the responses had been able to indicate below.

> • Dear Mum and Dad, I'm half way dead. See you in Hell.
> • I've had an accident while Helen and I were on our honeymoon. The police think that I had nothing to do with the cause of the accident.
> • Dear Mum and Dad, I have been in a collision. Me and the misses [sic] are still alive but only just. I do not want to worry you with details of the injuries. We are still alive and that's the main thing (RD: A, July 19, 1996).

B An Audiotaped Documentary

The next task encouraged students to achieve a deeper level of personal connection with an issue. The task evolved fortuitously when the DET: A offered me the use of an audiotaped copy of an award winning Canadian radio documentary, *Kevin's Sentence*, that he had taped during the weekend. It recounted the story of a

young teenager Kevin, who, as the driver, had unintentionally killed his two best friends, after drinking alcohol with them. He was required to do community service as a part of his punishment by talking about his accident to peers in schools. The scenario fitted perfectly into my lesson plan for the day, to introduce factors associated with *drinking while driving* and to increase the level of authentic and personal connection with the issues. I asked the students to listen to the documentary first then invited them to share their thoughts.

Students in School A were riveted to the story. Once the recording had concluded, the DET teacher asked what impact it had on them as teenagers. Only two students out of twenty-two responded (RD: A, July 18, 1996). My concern was that the task needed much more *activation* to encourage others to comment and at a deeper level. I modelled a personal response of my own explaining "how powerful it was for me and (explained) that at times I was close to tears as I recalled my personal experience of a fatal crash and how tragic this particular scenario must have been for the young teenager and the families concerned" (RD: A, July 18, 1996). The bell rang for the end of the period and the class was dismissed with little further progress being made. It was possible that students felt more than they were capable of showing or expressing verbally.

However, I was not prepared to let the potential impact of this documentary die at the end of the period because *reality activation* had not occurred yet. I resurrected Kevin's story on my return, and in keeping with the concept of *reality activation,* encouraged the students in their writing to assume the persona of Kevin. I wanted them to recount what it would have been like to be Kevin, having been involved in the crash and killing his friends.

My experience of a fatal crash led me to question whether students could become more personally involved by imagining they had also been in the crash. If they were not able to, it was likely, in keeping with "personal fables", that they could believe that crashes were events that happened to others and not to them or were simple events you put behind you and got on with life as if nothing had happened.

The *reality activation* process confronted students with more than tragic outcomes from a crash. The consequences had been severe for Kevin who, as someone their age, had failed to take responsibility for others. The documentary was

designed to confront adolescents with the outcomes from poorly made decisions especially involving alcohol. Kevin was interviewed personally, along with both parents of the two friends he had killed.

I asked students to consider whether his sentence was fair and what effects it might have had on him. Student responses to this task were generally consistent with the following sample, giving justifications for their personal opinion:

> His sentence was effective... because they (students in schools he visited) had to see how much pain he was going through...helping him to come to terms with what he had done wrong (Student Responses, School A, July 23, 1996)

A similar range of student responses to those in other tasks resulted from this exercise. A number of students showing caution provided justification for their opinion and included personal reflections indicating that they appreciated not being involved in such an event. Others considered what risks they had already undertaken and made them reflect on how they might avoid similar situations in the future.

> •Kevin's sentence was the right sentence...if sent to jail he might have wanted to kill himself...but by giving him 750 hours of community service which included talking to students at schools he has learnt his lesson probably 10 times over. Standing up in front of those kids would of [sic] been the most frightfully upsetting experience apart from when his two best friends died. Hearing that tape made me really think about the times when I've got into a car with some people who had been drinking and been driven home by a drunk driver. It really makes you think.
> • Feeling guilty...Why did it happen? If I had a chance to go back in time I would correct it, but I can't. I would be less self-confident. Not want to drink again (Student Responses, School A, July 23, 1996).

In contrast, one student was not convinced such an event could happen to him. These students remained an ongoing challenge as they were the targets for most DE messages. I felt that still more could be done to convince them that these events were dangerous and the risks were real.

> • I thought that Kevin's sentence was not much of an effect on me because I was not paying full attention to what was being said. The parts I heard were emotional but I don't think that it will sink in (Student Responses, School A, July 23, 1996).

C Vocabulary

I recognised the value of vocabulary knowledge, gained from my teaching of classroom music programmes, and perceived a similar need for DE students to have a working vocabulary of technical, DE-related terms. A vocabulary becomes a foundation for developing confidence in language use, a means by which memories and experiences can be recalled and described accurately and can provide the foundation for ongoing discussion of cause and effect. In terms of these students it was clear they did not have the vocabulary to express many thoughts clearly. "Our thinking can never be better than the words we use" (Schwimmer, 1968, p. 11).

Some students had experienced difficulties with some words in the questionnaire. Others had shown a propensity to boast about excessive risk-taking behaviours with their peers in ear-shot of the DET and me. As noted earlier, some students' lack of risk appreciation was evident in their language and I planned to continue addressing this within the programme.

I established a range of terms which included: road user, vulnerability, impact, human factor, road factors, vehicle factors, weather factors, priority (*Road Code* term), and position (*Road Code* term). I was keen to increase student knowledge of traffic-related terms so that students would enter into discussion more than had been obvious in the first few lessons. I included key words within my lesson plans for students to learn about. I first used student general knowledge to explain the meaning before giving a more accurate definition, if necessary, to record in their diaries.

Once the pattern of word acquisition had been established, I noticed that students liked to use these words at appropriate times. This occurred once when a new girl to School A was listening to a discussion and questioned "what do you mean fatigue?" Several students nearby turned to her with a sense of pride and chorused "tiredness". Her response was indignant "well, why don't you say tired then?" What she did not realise was the increased ability such terms afforded the learner to understand a traffic report or discussion in which such terms were used. Further evidence of the value of DE vocabulary knowledge was demonstrated when a visitor came to the class. I asked students to prepare questions for the visitor to answer. Most students were able to express ideas covering a comprehensive range of contingencies as a result and showed improved confidence in asking questions in front of their peers, a situation many had shied away from earlier.

D Newspaper Report - Kylie's Mistake

Students' confidence increased with the format of *reality activation* exercises by this stage in the programme. I designed the next task as another group activity to develop student confidence further. I organised students into six groups to explore implications from the report about an unlicensed driver who, having had an alcoholic drink, then drove through town and crashed into two friends talking at the side of the road (one was killed and the other suffered a broken leg).

In this task I conveyed the idea of different perspectives (the victim and accused) to students. I divided the class into small groups by distributing cards with either *guilty* or *not-guilty* written on them so they could discuss possible outcomes from each perspective. I then rotated around the groups but found many had difficulties getting started. Therefore, I modified the task and:

> (re)allocated the class into two large groups to explore the task. I worked with students identified as the *'guilty party'* (accused) while the class teacher (DET) worked with students as the *'injured party'* (victim)... I further simplified the task to become a *'discussion of the mistakes of the guilty party'*...The class seemed to relax into the task much more and were less inhibited than when matters were being discussed with the whole class (RD: A, July 22, 1996).

The exercise showed a good coverage of ideas and demonstrated that an event like a crash can have at least two perspectives, the victim and the accused.

> • I've learned my lesson through carrying the guilt of running those two victims over. Seeing it done right in front of me. What makes it worse is that I'm the one that has to carry the guilt of running that lady over for the rest of my life. I have learnt that only a little bit of alcohol can effect your driving (RD: A, July 22, 1996).
> •Why did she get off that light? She should have lost her licence for life or have some penalty like lose a job or not leaving the country. She should lose her licence for a longer time (didn't have a licence) or make her do some community service. (RD: A, July 22, 1996).

Although the task took time to achieve results, the responses appeared to indicate that students, in the role of the accused, presented responses that mostly acknowledged guilt and a number were even remorseful about their involvement.

> • I have learned not to drive without a licence. I have learned not to drive under the influence of alcohol, I have learned to drive carefully, I have learned to stop after hitting someone.
> • I have learnt my lesson. I will never drink and drive again. I am really sorry for what happened. I will never drive without a licence again.

> • I think I was let off easy because once you go to prison, the status of getting another job is very hard. I didn't mean it. I didn't even see them. One minute they weren't there the next they were. I couldn't stop honest to God I tried, but now I have learned my lesson. Thank you for being so lenient on me, I didn't know it would come to so much trouble (RD: A July, 22, 1996).

E Newspaper - 'Killer weekends'

A majority of students showed that they were developing a consistent level of awareness of risk and danger as the *reality activation* exercises proceeded. I planned this task to foster independence and analytical skills more but still gave students a chance to work in groups. I provided a series of four to five newspaper cuttings, each reporting *Killer Weekends* where multiple deaths (>6) had occurred. I modelled the activity for students by reading aloud one of the reports and listing known factors on the whiteboard. As they listened to the report I asked them to identify patterns that emerged. I then asked the students in groups, to:

> • Read each of the remaining traffic crash reports and list the following details: the deaths and injuries according to age, gender, time of day, vehicles involved, status of the dead person (driver/passenger) and offer possible causes.

By this stage the students had been introduced to a number of crashes and factors capable of causing crashes and they could continue by analysing the information into categories while the DET and I (in School A) helped those who had trouble reading the reports. I found that the boys in School B were able to do this task more independently. I felt that the *analysis* phase was likely to draw to a close in the near future.

Most of the students in School A were able to finish analyses of two of the reports and the results showed:

> • Many crashes occurred after midnight,
> • The age levels were mostly between 15 and 24 years,
> • Males were three times more likely to be involved than females (16:4),
> • More cars were involved (10 cars, 2 motor cycles, 1 van), and
> • Three times as many injuries occurred as deaths (RD: A, July 24, 1996).

Several School B students showed that they could complete analysis tasks independently and arrived at the same information without needing to work in groups:

> •Most fatal crashes were males aged between 15-30 and all involved cars. In two of five accidents passengers were also killed and 1/5 were female drivers. Most causes seemed to be vehicle factors. Most were head on accidents and happened in the late afternoon and early morning.
> •Most are males, most are single person deaths aged between 15-21 mostly - time of day varies - head on collisions.
> •I have found that more male drivers were killed than females. I reckon female drivers are more careful and cautious on the roads than males. (RD: B, July 26, 1996).

The responses showed that the students were trying to apply the knowledge being developed but I needed to provide more detail about *causal attributions* in lessons to follow.

F Television Documentary

I developed another *reality activation* task from a recently broadcast, *Inside New Zealand* television documentary, *The Young and the Reckless*, which focussed on the behaviours of young drivers and presented relevant perspectives. The students watched the first two sequences dealing with global issues such as compliance, restricted driver licence conditions, drinking and driving, and the results of a crash involving a drunk driver. A teenager highlighted the reality of grief and anger at the death of an innocent sister. For her, the short-term punishment of the accused was in sharp contrast with the life-long sentence her family faced with their loss. Similar excerpts from documentaries could be incorporated into a classroom programme whenever they added impact to crash analysis and *reality activation*. However, it was necessary to pre-edit such documentaries for content and task preparation before viewing them in class.

I prepared the following questions for students to record in their diaries prior to viewing the documentary itself:

- What are three problems young people face today concerning vehicles mentioned in the film?
- Write a statement made about innocent victims.
- Why should a survivor be angry after a fatal accident?
- What was the most common type of road crashes?

- Include an item of personal interest to you.

As happened in the *Kevin's Sentence* documentary, additional reinforcement (activation) was required for students before *reality activation* could occur. Such documentaries are designed for a general audience rather than adolescent DE students. I stopped the video on occasions, as students sometimes did not pick up important issues from the commentary because of the speed of reporting and students' initial focus on visual imagery. Two showings of the documentary would have been better but a lack of time necessitated that I move on. In spite of time constraints, I noted:

> The students were quite spellbound with the documentary and were the quietest that they had been for a long time...One of the students, previously referred to as a bit of a wild one (who also drove without a licence) could be heard making comments against the hooning sequences which the (DET) teacher felt was most interesting. (RD: A, July 29th, 1996).

G Reading Resource - Fifteen Road Safety Stories

The next *reality activation* activity was developed from a collection of road safety stories compiled as a reading resource for teachers by the New Zealand Police titled "*Orange*" (Doyle, 1995). Of particular relevance to the *TAKE FIVE* programme was a true story contributed by a Wellington student Kelly Winyard, aged 16, called "*One Day a Passenger*". Kelly gave her account of travelling as a passenger with her boyfriend from Wellington to Palmerston North to visit a friend having been involved in a crash. This account was particularly relevant for two reasons. It was an adolescent's story and it featured Kelly as a *passenger*. Her story contained more detail than a crash report written for a newspaper because of her subjective stance. Her narrative account demonstrated two important aspects about road crashes. First, she explained that an accident *can* happen to anybody. Second, complications can arise following hospital admission that can prolong or interfere with rehabilitation. In her case, she needed to be put on life support as her breathing and related systems began to fail and they needed additional assistance to re-establish themselves. The students listened as I read the story. I then asked them to:

> (In the role of Kelly) raise some of the issues that followed her accident in a reply to her grandmother who had sent her a card.

It is not obvious in discussions, media reports and DE resources that *adolescent passengers* are consistently the most vulnerable group to die and suffer serious injury of any group of passengers in New Zealand since 1993 (LTSA, 1994a; 1995b; 1996). While the focus of a DE programme is often placed on the acquisition of a driving licence or the up-grading from a restricted to a full licence, vulnerability of passengers is frequently ignored or overlooked. Students need to understand also that crash levels for adolescents have not only the highest for any age group since 1990, but each year between 1993 and 1996, deaths of *adolescent passengers* exceeded *adolescent driver* deaths by a third. The response from one student shows the high level of understanding some were able to convey from this story:

> • Thank you (grandmother) for your card, it really cheered me up, being in hospital is really boring, and its really frustrating when Mum and Dad came to visit and you can't talk to them (because of the tubes). ....Things were Ok until they (the hospital staff) thought I could breathe by myself off the respirator but they were wrong - it was too soon, and I passed out. But I'm Ok and I'm still angry at the nurse for doing that... I won't be able to sing... my leg has scars as well as my elbows. I won't be able to play sports this summer. I'm hoping school will still be Ok but its hard when you're carrying this extra emotional baggage, everything's going to be one big hurdle. (RD: B, July 26, 1996).

Many of the students by now were able to show the benefits of studying a range of crashes in their writing: they showed imagination at being involved, expressed a range of ideas, and described *cause* and *effect* and the implications of injuries in more accurate detail. The flippant remarks seen in earlier responses were no longer as prevalent. Kelly's report provided subjective detail that was lacking in objective newspaper crash reports and it had encouraged students to consider the outcomes more realistically. It seemed to inspire them to express themselves more creatively as well.

> • Thank you for the card - It is nice to get something when you are all alone. I have sustained a broken leg, which inevitably will end my netball career. They have given me an oxygen mask to help me breathe. I have a tube throughout my body, which irritates me especially my throat. I can't sing or talk too loud and I have physio twice a day. I don't know how I will cope getting back into a car. It's hard to forget what happened and the pain is a constant reminder. (RD: B, July 26, 1996).

H Statistical comparisons

I wanted students to compare New Zealand traffic statistics with those from overseas in preparation for the next (*confirmation*) phase of the programme, which dealt more with interpretation and application of traffic-related issues and information. This activity was designed to draw ideas from the *analysis* phase to a conclusion, as an introduction to the next *confirmation* phase. I took a bar graph from an Australian traffic resource "*Road Accident Facts*" (Vicroads, no date, circa 1995, p.4), which compared the level of road deaths in Victoria, Australia, New Zealand and several other European countries. The annual totals showed that New Zealand road deaths for 1993 were considerably higher (600 killed) than those of Victoria in 1994 (378 killed) and other states of Australia. The task for the students was:

> • to make an assessment about why a discrepancy exists between the two areas; Victoria has a population of about 4 million and New Zealand has about 3.5 million.

The task offered them the first chance to apply the knowledge that they were constructing from the *analysis* phase. Students from both schools, who had a range of similar views, thought that New Zealand crash statistics were higher because:

> • We go for our licences earlier;
> • The roads were better over there;
> • The climate is wetter (here), therefore, more dangerous; and
> • Maybe our cars were of poorer quality.
> • They had straighter roads; and
> • There was a better availability of public transport. (RD: A, July 30, & RD: B, August 1, 1996).

I challenged student perceptions because human factors had been totally ignored in their responses. Human factors had been the cause of each crash selected in the scenarios introduced so far and they were clearly the dominant contributor to an LTSA (1995c) spherical, *risk-by cause* graph which I had showed students as an overhead transparency in week two. The graph visibly represented factors contributing to crashes (human, vehicle and environmental factors) by size of sphere showing 83.7 percent of crash costs could be directly attributed to human factors:

> My suggestion, that New Zealand drivers were just poor drivers was uncomfortable for the students to accept in both schools. I reinforced my challenge by asking them if they thought Australian drivers were better than NZ drivers...then I showed them a bar graph which indicated that

> New Zealand performed significantly worse than Victoria, Australia, USA, Canada, Great Britain and Sweden. (RD: A, July 30, 1996).

The students did not have enough experience yet to appreciate how dominant human factors were in road crashes. This lesson revealed that I should continue to promote the message that human factors contributed to over 95 percent of crashes and "social costs" (LTSA, 1995c, p. 21) in New Zealand. It seemed that when students were invited to translate *crash factor* knowledge into abstract *traffic safety* concepts, they were not yet able to make the connection or link between the information being presented to them in class exercises (as in their re-enactments of crash stories) and the implications of these exercises in global traffic terms. Furthermore, it became obvious that student attributions of Australian driving skills were biased in favour of New Zealand drivers even though the statistical evidence suggested the reverse. They considered that *environmental* and *vehicle factors* were more likely to have contributed to higher crash statistics than the *human factors*.

I Topical theme - Hurry sickness

I located an article titled "*Hurry Sickness*" from a newspaper. The sentiments expressed by the author complemented two other newspaper reports I had kept on file, one of which had ended in a fatality. The first was a tragic local story involving a 14-year-old girl from a neighbouring school who had alighted from a school bus in pouring rain. I recounted the article for them:

> ...she could see her father waiting in the family car over on the other side of the road. Without thinking, she got off the bus and instead of waiting for the bus to pull away, ran out in front of the bus and was hit by a passing van. She died at the scene (RD: A, July 30th, 1996).

The second article, reporting a traffic study in Christchurch, showed that the average gain in time achieved by an aggressive driver in rush hour traffic over a commuter distance of seven kilometres was 37 seconds. I invited students to:

- describe how the reports related to the article on hurry sickness.

Responses showed that being in a rush might mean "basic safety checks can be forgotten. Events like this may not always end in death but may result in some kind of misfortune not worth taking risks for" (RD: A, July 30, 1996).

J Review of lessons

It was important for me to review the lessons that had been completed so far. Progress had been much slower than I had anticipated and a number of students in both contexts had been absent on more than one occasion. I designed the review as a recapitulation exercise to help students review what had been covered and to highlight key ideas that lay behind each story. My diary records describe the task:

> As a means of revising crash scenarios and stories studied so far in class, I asked students to consider revising materials by drawing little miniature or symbolic drawings about the issues raised. Students were asked to use a double page on which each of the tasks so far covered could be summarised (and illustrated) according to the given headings:
>
> Honeymoon couple Kevin's story Kelly's letter
>
> Kylie's mistake Weekend Killer Hurry Sickness
>
> (RD: A, July 30, 1996).

The pictorial exercise was designed to encourage students to think *symbolically* about the stories by transferring key ideas into visual formats rather than restricting them to use words. It was an attempt of mine to prepare students for an artistic project planned as a conclusion to the programme. I limited the activity to students in School A because of time constraints, but it was surprising how detailed and perceptive one or two students were at doodling in a short time. The task needed more time for effectiveness to be tested.

K Class visits of crash survivors

I gave a personal invitation to two car crash survivors who had sustained head injuries an opportunity to recount their experiences of road trauma as the final *reality activation* exercise for students. Kate was 12 years of age when she was run over on a pedestrian crossing. Jacqueline, a university student, was a passenger in a car that had collided with a lamp-post. After personally interviewing them to clarify their roles and obtain their consent, I asked each student to prepare two questions for Kate and her mother Judy when they visited the next day. Sample questions were:

- What was going through your mind when you had been hit? Did you think that you were going to survive?
- What were you thinking about at the time the accident happened? Were you scared that you weren't going to survive?
- Were you annoyed at the person who hit you? Did you see the car before it hit you? (RD: A, August 1, 1996).

I invited the visitors to peruse the questions for ethical appropriateness before the lesson began and prepared students for the graphic details that I knew would emerge.

My role was to act as an information bridge and provide emotional protection for students and guests while trying to achieve a flow of information that approximately tracked the sequence of events for the students to comprehend. Kate, who attended another high school, had lost some mental functions and was partially paralysed by the accident, giving her a distinct limp when she walked. Towards the end of the lesson, Kate, who had prepared a letter to share with the students asked her mother to read it to the students because of the difficulty she had with speech:

> I am writing this letter because so many feelings have built up inside me. You have changed my life so badly it's not funny. It's been over 13 months since you hit me and I can't forgive you for what you did, and I can't see it happening in the near future. In that 13 months I have never seen your face never heard your voice, nor even seen your handwriting. You could have come to see me in hospital. I was there for 8 months. It was not like I was going anywhere. You could have rung my mum, a simple apology wouldn't have made the nightmare go away but it would have helped to know that the person who had altered my life so much was sorry and for that I know I will never be able to forgive you. (RD: A, August 1, 1996).

Kate's mother had some concluding points that she also shared with the students:

> Mrs S: ...no but we still have to pay for some of the things that Kate requires. People seem to have the wrong impression that ACC pays for all of these things but they're wrong. I think that the main thing is to remember that when you are eventually in a car driving, that it only takes seconds to change not only your life but someone else's. If you do something to cause an accident, the effects of that are devastating not for just the person that you hit, but the effects just go on through each member of the family. (RD: A, August 1, 1996).

This was also an exercise in *reality activation* for me too as my diary comments note:

> I was particularly impressed with the way the students were attentive throughout...The poignant moment for me occurred when Kate's mother read a letter which Kate had drafted to the woman responsible who had not apologised to her or the mother for what had happened. This particularly moving letter said much of what innocent victims suffer, and is all the more tragic knowing she is still a child and much of her future potential is now permanently limited...her mother added... Kate has lost so much - she was an under 13 soccer rep - she can't walk properly let alone kick a ball - she can't ride a bike - she did a triathalon

> a couple of months before her accident. She can hardly do any of the things that she used to do. (RD: A, August 1, 1996).

Student comments in the majority of cases were clearly empathetic towards Kate's plight. I hoped that this would be the case because it meant that the concept of *reality activation* could also occur as a *personal response* from a story rather than only occurring as a result of *personal re-enactment*:

> • I really feel sorry for her and it means a lot for me about careless driving on the road.
> • I thought that visit was a great experience for all of us because it helped explain a lot about some wild drivers. I was quite surprised when I heard that the car pushed into her at 55kph and she went flying for 21 metres. I would of thought that she would of died but she lived to tell the story.
> • Kate's visit made a big impression on me because I felt sorry for her because her life has been destroyed by someone else's stupidity on the road. They were irresponsible and stupid which resulted in a near-fatal accident (RD: A, August 1, 1996).

A number of responses, in particular, highlighted the personal self-messaging that could be seen when students contemplated the implications for themselves:

> • I think that Kate's appearance today was very effective to me because you don't really realise much about what happens to the seriously injured people until you actually go through what had happened yourself. It made me think about driving twice which was really shocking because when you get to see what actually happens to a person involved in a car accident, and when you see all the difficulties that they have or are going to have in the near future, it is very scary. And I just hope that she and her family recover from all Kate's difficulties and I hope that Kate will be able to do all of the things that she had been doing before the accident.
> • I thought that Kate's visit was very sad and it really made me think that one minute you could be a normal person living a normal life, and the next minute your whole life could be changed forever. And it also made me think that even though everyone makes mistakes, you should be more cautious and careful when your [sic] driving (RD: A, August 2, 1996).

The latter example highlighted key factors that did not often emerge from class discussions without a deal of prompting: the reality of human fallibility in the driving task and a reciprocal need to consider personal mistakes as well as the mistakes of others. One of the boys in School B was highly motivated and volunteered that "he would have a lot to tell his mother when he gets home because he always tells her what things have gone on in school when he gets home" (RD: B, August 2, 1996).

Jacqueline's case was not as physically horrific as Kate's although her head injuries were serious and caused her considerable anguish as her injuries were responsible for a two-year delay in continuing her university studies. Her presentation went much as Kate's had gone except that Jacqueline, as a university masters' graduate, was more erudite. She acknowledged that her brain injuries had resulted in her compensating for difficulties in processing and expressing thoughts, which caused her to speak very quickly. As a consequence, the boys in School B were less involved personally with her story as she did most of the talking. I was concerned about the implications of this for her visit to School A. She would receive a less tolerant response from the students there. They would find her difficult to understand especially if she explained things that were "above their level of comprehension". Therefore, I decided to approach the lesson in a different manner for the students in School A. Having discussed observations made during the first session with her in preparation for the second class, I negotiated a change in approach as described in my diary account.

> I wanted the students to discover the extent of her crash and the details about it by asking questions to which J could only answer 'yes' or 'no'. This was to encourage the students to be more courageous about speaking in front of the class and for the lesson to be pitched more at the students' level. The DET was fairly sceptical about the likely success beforehand but was prepared to go along with it. Most student questions showed they had a keen grasp of the contingencies that had emerged in the cases we had already studied. Rather than J presenting an account of her experience for the students directly, this activity forced them to review all kinds of factors which had been discussed over the last three weeks (RD: A, August 2, 1996).

Both the DET and I were surprised at the range of ideas, which the students in School A expressed knowing that they would not have been able to have achieved that earlier. A sample of the questions below record how the session progressed.

Were you at fault?	no
Were you badly injured?	yes
Was anybody driving drunk?	no
Was the driver at fault?	no
Were you driving?	no
Was someone crossing the road?	no
Was there a pedestrian involved?	no
Were you a passenger?	yes
Was it in Hamilton?	no
Was it raining?	yes (RD: A, August 2, 1996).

I observed greater confidence had emerged in the students' classroom demeanour during the exchange of questions and responses. A surprising number of students used words and explored details about the crash with more confidence than they had shown before. The questions focused on the car (its registration, warrant, and condition), occupants in the car, peer pressure (only the driver and she as a passenger were identified), where she was sitting (front left) and the time of day in which it occurred (evening).

Discussion covered these topics:

passengers	power pole	car	alcohol	seat belt
young age	swerving	hospital	road	male driver
licence	unconscious	brain damage	broken bones	night time
internal injuries	speed	sliding	knowing road	front passenger

Problems mentioned were related to:

single car	speed	youth	alcohol/ drugs	gender
being licensed	time of day	distraction	showing off	

The *reality activation* ideas which emerged from Jacqueline's session, which were similar to Kate's were:

- •The long time for recovery.
- •The loss of a great chunk out of a life.
- •The frustration of not being able to do some things she could do before.
- •The effect it had had on other family members.
- •The loss of memory of the accident.
- •The retraining of the brain to accomplish some tasks (e.g., language and speech).
- •The effect on the vocal chords of life support lines.
- •The long period being kept in intensive care.
- •Both (survivors) required Occupational Therapy, Physiotherapy and Speech assistance.

This exercise had provided a fitting conclusion to the *analysis phase* and had prepared the groundwork for the *confirmation phase* of the course scheduled next.

5.4. Closing note about knowledge, skills and attitudes

The *analysis phase* involved students using skills of measurement, review, self-review, analysis, listing, identifying and applying existing knowledge to appreciate how crash factors could be reduced to make them safer. Some students could accomplish these outcomes to some degree independently but students in School A were generally less comfortable about working at tasks on their own. Maori students

especially appeared to benefit from small group work as it gave them a sense of community support. In School B, several students appeared to work at a higher level of achievement and were able to work more quickly, quietly, and more independently. This required me to consider how to cater for a diverse range of abilities and learning preferences that could offer students sense of progress.

For the following *confirmation phase* of the programme, students would be expected to discover and *confirm* patterns in traffic statistics, both at a local (driving task) level and a global (worldview) traffic level. I hoped this would eventually lead to a safety strategy being developed in the *synthesis phase*, the third phase of the programme.

5.5. Continuation - Phase 2 : Confirmation

At this point, the narrative becomes a reflective review of students' reactions to the *analysis* phase, as a preparation for the *confirmation* phase.

5.5.1. Review

I had explored the concept of reality activation with students and I was satisfied that most activities involving activation had had a strong impact on the students. However, several students had made inconsistent progress. I found teaching these students was more challenging than I had imagined and experienced before. I wondered whether the lack of success in previous DE programmes could also be attributed to student learning difficulties which was a matter of pedagogical importance for me as I planned the next phase of the programme.

I began the third week by consolidating the work I had done with students during the previous lessons to ensure that all students knew what had been covered. The *confirmation phase* would focus more on students' cognitive abilities including measurement and comparison of recent crash reports and LTSA crash statistics. I was seeking evidence of important themes and an awareness of patterns of driver behaviour in this phase. I planned to continue the construction of knowledge from the previous phase by asking students to identify patterns and describe them in terms of abstract concepts such as optimism bias, errors of attribution and peer pressure. Learning outcomes I hoped that students would achieve were: to become more aware about being safe, to develop a positive attitude, and to know how to maintain safety for others.

I planned that students should explore the characteristics of different road user groups (like passengers) and driving conditions (rural and urban). The skills to be incorporated included the recognition, identification and explanations of crash outcomes, the interpretation of statistics and the making of comparisons between statistical records and local reports (like the *killer weekends* activity that has already been mentioned). Peer issues for students were planned so that they could identify and explain behaviours and influences that had possibly led to crashes in the traffic studies that they had already undertaken.

I was also informed by the DET in School A that the DE class would be required by a group of Japanese students as a home room during their stay. I arranged to use alternative rooms for the *confirmation* phase. This was a preparation for the third phase of the programme organised to *synthesise* new knowledge into *checklist for traffic safety.*

5.5.2. General Progress

I was concerned by the third week that progress in School A was slower than in School B. I noted a high rate of absenteeism in one diary entry about School A during the first two weeks and had also found a similar pattern in the attendance of School B students. While absenteeism could account for slow progress to some degree, a number of other areas needed to be appraised for influence on progress. Topics in the *analysis phase* enabled students to demonstrate their understanding of the need for caution in traffic but a small number of students were not convinced that what they were doing, like driving without licences, was risky behaviour. I had not been prepared for the levels of resistance some students revealed in their diary entries, their classroom behaviours and questionnaire responses. Resistance to learning was a topic I had not found mentioned in DE research. Indeed, there appeared to be an assumption that learning would naturally follow on from the presentation of DE content.

The work with the students revealed that many of them lacked personal confidence. There was a limited ability to initiate and sustain activities unaided, and a lack of concentration when undertaking classroom tasks. I wondered what personal effect I had on students as I realised that unless a number of changes were made to the programme and its approach, student resistance or reluctance could escalate

further. I was approaching the halfway stage and was less confident about the rate of progress I could achieve in the next confirmation phase. *Reality activation* activities had largely been successful, but some students required more individual support to achieve success.

Some of the assumptions on which I had based the programme needed to be reviewed, particularly in the light of difficulties I was facing with a few School A students. While more students in School B could accomplish tasks individually, engage in discussion and show less resistance, by comparison most in School A relied on others for answers, would seldom voice opinions in discussion and were less cooperative in the classroom. I had not yet been able to involve students in both contexts as *collaborative* or *collegial partners* in AR.

5.5.3. Events come to a head

My apprehensions about student achievement and the effectiveness of the programme came to a head midway through the third week in School A. This lesson during the last period was traumatic for me as it made me realise that the problems had reached a more serious level than I had been prepared to admit. I could not afford to delay a re-evaluation of all aspects involved if the programme was to be effective for students. My diary notes:

> I was sure that I had gone as far as I could go with the *analysis* phase. Any more conceptualising of the causes and outcomes of crashes would be boring for them (the students) and overstating the point.
> I realise that the students really want to make further progress in gaining their licences. By taking the learning activities too far away from the Road Code and driver testing arena, I feel is going to mean trouble. Of the goals stated by students in the base-line questionnaire (Q1a), 43 percent of the students had made some reference to obtaining a licence or the next level of licence. During the lesson I casually talked to some students about their personal aspirations about obtaining a licence. Most wanted to get their learner's licence (which would enable them to drive on the road legally with a supervisor over the age of 21) (RD: A, August 7, 1996).

However the lesson did not progress as planned. On reflection, three factors seemed to stand out. First, there was a mismatch in teaching-learning expectations. The overall programme had not addressed driver licence issues (as negotiated with each DET) which students in School A expected. Second, student concentration in School A was inconsistent, as I had experienced on one previous last period of the day. Many

students were uncooperative, argumentative and resorted to off-task and distracting behaviours. Several instructions for the lesson were followed with little care or regard to the task, its purpose or execution and a majority showed a lack of effort. Third, the DET, who had been present for each lesson up till this point, was not present on the day.

It was week three and the students had not previously been under my solitary control. It was obvious to me, from the behaviours alluded to above, that the task was not holding their attention. High levels of distraction concerning the lesson focus, a lack of application to the written task and incessant chattering about irrelevant topics had caused me to caution particular students as a general warning. I realised the implications could be that student behaviour and cooperation might deteriorate further.

I was principally concerned about the behaviour of students, their abilities and their lack of desire to learn on this occasion. As student behaviour deteriorated, it threw into focus how important timing of lessons could be and for me in School A how the DET's presence had affected behaviour. I began to see patterns emerging. Teaching during the last period of a school day for these students needed a different approach. A classroom programme needed to be considered not only in terms of traffic safety but also in relation to student capabilities, their personal concerns, the scheduling of subjects and activities and other factors that might influence student learning in a class, otherwise, a programme might not be successful at all. I could appreciate that teaching strategies had important implications for effectiveness and the extent to which students would become motivated.

I recorded my frustration about the day in my diary and reflected on the events leading up to the lesson and on the lesson itself. Unexpectedly, this lesson in School A had become a *premature conclusion to the first cycle of AR.* I reconsidered my options. The lessons in School B had progressed more in line with my expectation of student learning outcomes. However, I needed to make the changes in School A immediately and I assumed that similar changes would be of benefit to several students in School B. While a few School B students had shown a lack of effort similar to many students in School A, they had not shown the same level of confrontation or resistance to learning. It was a time for me to stop and reflect.

5.5.4. Praxis

The August 7th lesson prompted me to reflect on the progress so far and the events of the day. Sungaila (1989) noted of teaching and learning that it can "never be orderly, stable and equilibrial. Rather it is and ever will be seething and bubbling with change, disorder and process" (p. 7). I wondered too what ideas could be incorporated within my practice that could further inform me and influence the programme as I continued forward. As part of this "reflective praxis" (Wildman, 1995, p. 177) it was necessary for me to review all data expressed in diaries (exploring the "socially constructed nature of reality" [Denzin, 1994, p. 4]) to better appreciate the issues and implications from them. Contained within a narrative, such insights allowed a social dimension to be better understood (Riesmann, 1996).

My initial reaction was one of extreme disappointment after all of the time and energy that I had put into developing the programme and preparing resources. I was not really happy to make changes to the programme until I realised that I needed to take some measure of personal responsibility for the outcome.

> I felt that I had become sidetracked to some degree having to concentrate on matters of discipline rather than the content of the session and the planning for the next sessions. I realised that there were factors that I couldn't control. The class was tired. The DET was away. There was a need for me to establish a meaningful inter-personal relationship with the class irrespective of the DET's presence. It was a shame that all of these things combined so dramatically in that lesson (RD: A, August 7, 1996).

I had to acknowledge that I had become too close to the project and failed to *read* some of the signs accurately, therefore, needed to review my approach.

> I knew that in the lesson, I had asked them to reflect on the materials we had been working with over the last two weeks, which wasn't the type of thinking activity that the students were enthusiastic about...I was really frustrated that the lesson had not been easy and had not gone well. I felt I had accomplished very little. I even wondered whether I was really going to make any further progress with them. I wondered whether I could be bothered wading into the matters I would have to deal with the next day. I had to rapidly reconsider my whole approach and programme (RD: A, August 7, 1996).

The situation weighed heavily on me. The DET was supportive when discussing matters the following day before the next lesson. He offered to take future Wednesday afternoon sessions himself and show students video resources on file. I

thought that this was opting away from classroom factors that are a normal part of any teacher's responsibility.

I adopted a more positive stance, deciding to continue with the lessons but modifying them to cater better for the students. The students were already classified as low achievers so their work had to suit their abilities. It was clear that I should take more account of the conflict between teacher and students' aims, as many students still wanted to sit their licences. Rather than just being a management issue, it was more about students who had genuine learning difficulties being self-motivated to get their licences. I made a decision "to continue as before but I would address unresolved matters with the students in the next session. Meanwhile I needed to reflect further on the issues at hand" (RD: A, August 7, 1996). I gave a lot of thought to the changes I felt I needed to make in my approaches with students and to the programme before I faced the same students the next morning.

5.5.5. Narrative direction

Up to this point, the narrative has been related to the first research question, in particular, on the *reality activation* activities as a strategy to activate students to extend their safety knowledge, skills and attitudes to keep them safer on the road. However, as already mentioned, I was not satisfied with the progress of many students. As I reflected on the activities I became more critical of the assumptions I had based the programme on. Were they all sound? I summarised what had happened (see Figure 5.2 below) focusing on the students' actions, reactions and situations that arose in the classroom, the process of teaching and learning, and the contribution made by me and my concerns as the teacher while teaching the programme. I continue the narrative now with my reflections on the first major AR cycle and begin with the assumptions I had made and reconsider what other theoretical ideas could be relevant for the research and programme.

IMPLEMENTATION ONE : SUMMARY AFTER AR CYCLE ONE
The teacher's position: I had hoped that a different approach to DE would inspire students to consider adolescent over-involvement in road trauma seriously and show as a result increased caution in written work and discussions. This did not occur to the level expected. *Reality activation* activities were successful but changes to the programme were needed.
The students' position: I had expected too much from the students. They would only accept ideas I had for their safety if they were convinced of their value. The students' expectations of the course were different from my curriculum goals. Their classroom behaviour was chaotic at times although many diary entries reflected genuine personal thoughts not shared in class. Students appeared to prefer group-oriented tasks and were more reticent in open learning situations. Many students relied on me for an affirmation that they were on the right track. The positive value of *reality activation* activities was revealed in their diary entries.
Knowledge, skills and attitudes necessary for adolescents to be safe on the road: The objectives set for Phase 1 (*analysis*) were achieved by most of the students. A minority of students, however, were not prepared to acknowledge that they took unnecessary risks.
Important features of being an adolescent that needed to be considered in a DE programme: Most students seemed to conform to a subgroup of adolescents. Outward characteristics showed them being socially confident with peers but lacking confidence in classroom learning situations. Some contravened licence regulations.
Teaching methods and associated learning theories that could assist in the development of a DE programme: I used a range of teaching methods: *group work, discussion, modelling, visual diagrams (graphs), and role-playing* and *direct instruction.* Classroom discussions were not successful in School A but *reality activation* activities worked well in both contexts and with most students.
Teacher attributes that were important for the delivery of DE in the classroom: I needed to adjust my expectations of the students in terms of their abilities and educational needs. It was important to acknowledge that I needed to change tack to be more effective.
Factors that contributed to the effectiveness of a road safety programme: learning objectives were valid but were in need of further realignment to be relevant for students. Content and structure of instruction were appropriate. However, I had underestimated the impact of learner, instructional and social variables, which needed to be more congruent with student goals before the level of effectiveness could be increased.
Effective Elements of the programme: Student diary entries showed personal responses that were not often evident in classroom activities. Small group tasks and tasks where teacher support was available were more necessary for students in School A.
Changes to the programme in light of the First AR cycle: I needed to consider more support for the *ROAD CODE* for students wishing to sit their licence, and I needed to consider other ways of presenting material for students. This could involve exploration of 'concrete-operational', visual and kinaesthetic modes of activity in tasks.
Teaching & Learning Development: I found a greater reliance on teacher affirmation. A few students who exhibited independent learning skills and the confidence to complete tasks, were mainly from School B . Task design needed to cater more for group activities.
Research / Researcher Issues: Several assumptions had been inappropriate and I was not as confident at achieving some of the goals I had planned. I needed to review educational theory and other literature.

Figure 5. 2 Implementation I - Summary of the First Cycle of Action Research

5.6. Reflection : Action research cycle 1

5.6.1. Assumptions

I became convinced that some of the assumptions, made explicit in Chapter Three, needed to be altered. I had assumed that students would be receptive to ideas about increasing personal safety. However, I found that several students were not ready to change their ideas about DE and risk-taking in spite of studying factors contributing to high rates of death and serious injury for adolescents. Although many students showed a preparedness to take ownership for personal safety, a number appeared to opt out of it. The wider problem of adolescent over-involvement in road trauma appeared to be beyond the comprehension of most students. Many conveyed an idea that, even though they had studied a number of cases, their current safety record was "proof of their continuing ability to be safe" (my translation). As a link to the "personal fable" and errors of attribution, crashing was an event that "involved others, not them". To me as the teacher, their failure to acknowledge danger was a challenge to persevere with. I felt that the messages behind *reality activation* activities were more important to continue with and develop further. I would have to work harder or smarter to help risk-takers see that education could help them as drivers, that is, to see longer-term goals. I had also assumed, in line with educational theory showing the advantages of independent learning strategies, that students would be self motivated and enthusiastic about new ideas.

Instead, I found that most students in the DE contexts *were not* independent learners and were not necessarily enthusiastic about activities designed to help them become more independent. While there were exceptions in School B, this came as a surprise considering recent advocacy of child-centred, and problem-solving approaches to learning. The more I sought to engineer activities towards developing independence the more resistance I found in the classroom behaviours of students, especially in School A. I acknowledged that students who had had previous difficulties with schoolwork and reading over the years were likely practised at being failures. They had no doubt witnessed throughout their school life others who had been more successful learners. Some revealed low academic self concepts by calling themselves "dummies", similar to low-achieving work-experience students who Ryba, Edelman and Chapman (1984) noted reported "significantly lower self perceptions of academic ability, and a poorer sense of social/personal adjustment than

students achieving at average or above average levels in schools" (p. 84). I noticed many students were less likely to exhibit confidence and independence in their approach to classroom-related tasks.

It was going to be difficult, therefore, to have students involved collegially in designing and modifying the programme. Many appeared to shy away from independent thought as something too difficult for them. I needed to foster a higher level of trust in me and offer them a greater chance to understand what DE tasks could achieve for them before students in School A, in particular, would become wholeheartedly engaged in DE activities. I had not realised how deep-rooted student insecurities could be and how difficult it was to reinforce, within these students, a feeling of success and confidence. I began to understand why my plan to take audio and video-recordings of some lessons (reported on later) had been so threatening for them. It was also a possible reason why many students sought one to one teacher-approval for work they were doing, even though I could see that they were coping well with the task. They seemed to need constant reinforcement.

I had assumed that my recounting of a fatal crash would be sufficiently alarming to motivate students to reduce their overconfident attitudes. However, I found that my story, which resulted in the death of an adolescent student of their age, was *insufficient* reinforcement or motivation for students to adopt a more serious approach. Although serious consequences followed the event, to them it was a "second-hand experience" which made little impact. I needed to continue giving students examples of crash scenarios but treat them more as *reality activations* to counteract a seemingly impervious belief they held that crashes could not happen to them.

I had assumed that DE would be motivational for them at a pre-licensing age. Instead I found that the appeal of DE for adolescents (Simeon, 1979) *did not* make students necessarily any more enthusiastic and cooperative in classroom situations. The baseline survey showed that there *was* enthusiasm for getting a licence and for driving for nearly half of the students but enthusiasm appeared to end there. Students asked me on several occasions what a particular activity had to do with getting a licence, as if it was the only important goal for them in the programme. For a small number in each school, DE seemed to be an easy option as there were no exams or tests to take unless students were sitting for a learner's licence. Occasionally students

displayed some apprehension about driving and wanted to be sure that they knew as many things about being safe on the road as they could before starting to drive. As a result, I planned to increase student enthusiasm for the course by aligning activities more closely with student wishes, in particular the *Road Code* and driving-related issues. Activities needed to be adjusted more to student ability levels as well.

I had assumed that students of this age would be confident and in line with Piagetian cognitive learning theory would show abilities to rationalise using abstract ideas and concepts about traffic and safety. Instead, I observed that many students *found it difficult* to handle abstract concepts and make links from classroom-based knowledge to more global traffic or world-view perspectives. In addition, it became obvious that *errors of attribution* were common. An overestimation (*optimism bias*) of New Zealanders' driving abilities was seen in student explanations of a lower road toll in Victoria and Australia. No students mentioned human factors in either school.

I needed to continue presenting *reality activation* activities and consider how a more *concrete-operational* emphasis might assist student comprehension of abstract concepts as the course proceeded. Their difficulties with *abstract* ideas encouraged me to consider safety knowledge transfer into other media (as mediation for learning to be described in the final assumption) and to explore more visual and kinaesthetic dimensions within the classroom tasks.

A personal assumption that *reality activation* activities would assist students to understand causes of road trauma showed promise for most students. Several expressed personal horror at some of the outcomes from crashes in cognitive and affective responses contained within their written work. By contrast, students who reported more instances of risk-taking claimed that they were unaffected as demonstrated in this response: "I thought that Kevin's sentence was not much of an effect on me because I was not paying full attention to what was being said. The parts I heard were emotional but I don't think that it will sink in" (RD: A, July 19, 1996).

Towards the end of the *analysis phase*, however, a majority of students expressed sentiments of sadness for victims like Kate. Occasionally students gave messages of self-caution: "Kate's visit did a lot for me. Now I can see the effect of careless driving. It would make me think twice about making a manoeuvre on the road that could be dangerous" (RD: A, July 19th, 1996). I believed it was important to

continue with *reality activation* activities and have other people visit the class who had experienced trauma and could emphasise strongly the danger of being complacent about safety and risk taking.

Finally, an assumption that a *TAKE FIVE* checklist of traffic safety targeting human factors might emerge from the study as a strategy for risk prevention remained a possible outcome. It could result from students synthesising information gleaned from the *analysis* and *confirmation* phases. I would, however, be more conservative in my expectations that students would have the ability to construct such a checklist that would represent evidence of less risky attitudes and behaviours in light of the lack of progress I had experienced with them to date. A checklist of traffic safety could serve as a foundation for being more careful though, and could be applied to any road user.

The final assumption, to continue to explore was the potential for the arts to reinforce positive learning experiences from the programme and mediate them into a personal code of practice. A carefully planned strategy would be necessary though. My introduction to this type of activity through a song-writing exercise given to School A students was quite well received. But as a result of my experience with the students so far, I could now anticipate difficulties that would lie ahead, which I had overlooked previously. The majority of students who were difficult to motivate at times, often had difficulty with abstract concepts and symbolism, and lacked confidence to enjoy independent learning opportunities within the class. Furthermore, I had no exemplars of ways in which the *arts* could be used as models or motivation for greater safety for students.

5.7. Research Question Two :

What adolescent characteristics are important to consider in a DE programme?

It became clear that several characteristics of these students impacted directly on DE teaching and learning. Many had learning difficulties, behaviour problems, problems applying themselves to tasks, and difficulties with motivation. Some were frequently absent from class and showed resistance to teacher requests. I became aware of relatively high levels of absenteeism towards the end of week two, although several of the characteristics outlined above became obvious from the first day in

each school. Students for whom these observations were not applicable were mostly from School B.

As indicated in Chapter Three, I visualised student responses being represented on a continuum from those who showed caution and awareness of danger and unnecessary risk-taking at one end, to those who had reported taking risks with peers and would challenge suggestions about being safe at the other end.

5.7.1. Adolescent characteristics

Literacy. A number of students had difficulty filling out the questionnaire and some left sections blank (refer green highlighted marks in Appendix G). Several referred to neighbouring students during the survey in spite of the DET and me trying to preserve the integrity of responses by inviting them to ask us for assistance if they had questions rather than consulting neighbours. Although sharing answers contributed to a problem of data validity, on reflection it could be regarded as a cultural feature of these students in the class. As I worked alongside them, two factors seemed to contribute to a lack of language confidence. Many had poor language and reading abilities compared with mainstream students of their age and rather than commit themselves to personal comments in discussion or independent actions within classroom activities, they relied instead on assistance from friends around them.

Risks in traffic. Written responses, mainly from School A students, revealed that some acknowledged past risk-taking when travelling with others who had been drinking or had not worn seatbelts. The baseline survey also showed that approximately a third of students in School A had reported driving without a licence and another third knew of others who drove without licences. Although late night curfews, adult supervision and restricted access to peers as passengers were incorporated into GDLS regulations as countermeasures to crashes, several students continued to contravene legal boundaries. By comparison, only one out of eighteen students in School B had acknowledged driving without a licence and anecdotal reports describing dangerous practices were scarce.

The lack of appreciation of risks associated with driving without a licence, was highlighted by Thrush (1992) who was concerned by the "numbers of [teenage] drivers, particularly in South Auckland who... [at that time were] unlicensed, or if on their restricted licence...[were] flagrantly violating the restricted conditions" (p. 38).

The lack of concern for the safety aspects associated with having a driving licence could be seen when students explained why they drove without licences. "I can drive, I don't need a licence; can drive already; I like to drive; to get places they need to fast" (Qa1 data, July 1996). Reasons given for not getting a licence were, "too lazy to sit (two); can't be bothered sitting". Other factors were mentioned including failure at the test, cost, to be cool; ... have no other transport". Students who drove without licences mostly regarded the value of a licence as being "just a piece of paper" or necessary only "so you don't get in trouble with the police". This was in contrast with a majority of more compliant students who appreciated that a driver's licence had an inherent safety value for everyone.

Difficult and rebellious students. One girl in School A caused and aggravated many of the behavioural problems in the class. Her non-cooperative behaviour was obvious from the outset.

> One of the girls appears to resist specific guidelines by subtle responses and body language, challenging ideas for apparent effect with peers and making excuses for not rigidly complying with my requests e.g., carrying on talking in the group following caution (RD: A, July 18, 1996).

The girl's behaviour was distracting for others and even with the DET present, I found it difficult to encourage more cooperative behaviour from her. This inability for me to reduce the influence she had on others forced me to consider ways to counteract the social influence she and her peer group exerted on others. The actions I took, to "reorganise friendship groups for tasks from time to time", to encourage greater independence of thought and to counteract the distractions, probably reinforced resentment against me and encouraged the students to stick together even more. It was the same girl who had caused many of the problems in the lesson that caused me to reassess the programme.

> The girl who I had asked to see me at the end of the previous lesson had not been to class since. The DET informed me that she had changed her option. (RD: A, August 14, 1996).

Her absence made the class more manageable.

In the boys' school, School B, I made a note on the second day that "one of the students who was disruptive was absent today" (RD: B, July 18, 1996). Compared

with the girl in School A, this student appeared to crave attention from his peers by provoking those around him to react to his murmurings.

> The student previously mentioned, whom the DET threatened to remove from the programme, was given another chance of joining this class... he continued to make comments when the instructions were not to... His comments were not malicious but seemed to be made as a continual babble to be noticed / accepted / considered... I asked him to move to the front of the class. (RD: B, July, 1996).

He failed to achieve satisfactorily, was frequently absent and was a distraction to my teaching. Although it might have helped other students' learning if he had not been there, students like this have to be catered for in the classroom.

Student behaviour. The behaviour of many students in each school was chaotic to begin with. It lasted until I could establish an acceptable level of rapport. In School B student behaviour was more stable overall. However, before attaining their cooperation and support, I was challenged by a number of students who seemed keen to "try me out" in a similar way as the *sussing out* period Thrupp described in his classroom research with lower achievers which "continued throughout the year" (Thrupp, 1996, p. 420). I wished to have their cooperation and enthusiasm to explore a new approach to DE with, therefore, I needed to resolve any issues of credibility, consistency, work expectations and discipline immediately with the boys in my role as a DET for a term. On day three I recorded:

> Once I had explained the lesson format, (and because some students did not have their books organised), I asked them all to leave their gear on the table and assemble outside the classroom in the corridor where I would talk to them further. Once outside, I made it very clear that I was dissatisfied with some of the behaviour and work ethics that had been displayed during the previous session. I indicated to two boys (who thought this talk might be a joke) that I had found their effort so far especially unacceptable. If they were to be a part of the class, which I had organised work for, they needed to give their best, and nothing short of that expectation, otherwise they were not welcome to attend the class. I mentioned that I did not want to have to talk in this way again and that if they could see my point of view and were prepared to give this effort, they would be welcome to enter the class where we would begin anew. I did acknowledge that many had given their best effort so far and that was appreciated. My experience of teaching told me that if I didn't solve some of the students' poor attitudes to work early on then I would not be making the progress with students that could be made (RD: B, July 23, 1996).

As a result in School B, behaviour problems were reduced to a minimum from then on and I was able to build a strong sense of trust and enjoyment with most of the students.

The atmosphere in School A was more complex by comparison. Some students (girls mainly) appeared resentful about me coming and taking over the class from the DE teacher (DET) especially considering he was present during most lessons. Many delayed getting started to work or were difficult to motivate. Even helping students was fraught with difficulty. When I attempted to give assistance to some individuals, it appeared that they were somewhat offended by me noticing their difficulties and would then opt out of doing activities, saying they were too hard, or claimed that they "did not have a pencil" or on occasions flatly refused to comply with requests or suggestions I had made.

Peer influence. I considered making video and audio recordings of some lessons to assist me with data gathering and for recording lesson content once the programme was underway. However, when I explained to the students in School A that I would like to record some classroom sessions, one or two of the more vocal students said that "no-one was going to record me speaking!" Other students tended to follow by mutual consent. It was possible that they felt I was treating them as "guinea pigs". The individuals concerned continued to claim the moral high ground with the result that all students refused to speak if a recording device was present. What had begun as an informal classroom show of resistance resulted in a tacit operational policy. In spite of reassurances to the contrary, no discussion was possible when a tape recorder was visible. This culture of resistance was spearheaded by a few of the vocal girls. Under the circumstances both the DET and I agreed to abandon the idea of tape recording lessons to avoid unnecessary conflict.

Meaningful discussion in School A. I had planned several discussions on many crash-related and traffic topics. Because of the factors already mentioned, such discussions did not develop as I hoped and often ended in silence. Thrupp (1996) noted similar patterns in one school where teacher questions and comments were often met with silence. Even where the teacher had encouraged an atmosphere where students felt good about speaking out, "answers were much less likely to be correct or correct enough to use to continue the discussion...teachers asked fewer questions...

this meant their classrooms were less reciprocal" (p. 425). I discussed this with the DET:

> The main problem at the moment seems to be very little response from the class collectively when a question is asked. It is very hard to gauge where their ideas are.
> Me: Are they too shy to make a contribution?
> DET: This is an option (elective subject) so that they haven't really been together much before (as a class in their own right) but even so they should be starting to get the hang of it.
> Me: Do you think that splitting them up into two groups made it any easier?
> DET: I don't know. I would like them to be able to work in that type of grouping - I don't want them to work with their friends all of the time, partly because they sit there and chat about other things.
> Me: and they're not terribly serious. I heard one of them say, "go on answer something answer something". It seems to me that the class culture is conveying the idea "let's not respond".
> DET: yes that's right and hopefully that will change but we might need to use some different tactics to get some responses (RD: A, July 22, 1996).

High level of absenteeism. I was aware after two weeks that there was a consistently high level of absenteeism in both schools. It had an important impact on the progress of lessons and required me to repeat work on several occasions. Sometimes those who were absent missed out on important classroom experiences when visitors contributed their knowledge and experiences that could not be repeated.

5.7.2. Conclusions about the impact of adolescent characteristics

I noted that many students exhibited more learning difficulties than I had expected. Unless I could reduce the effect of barriers to their learning, I could not make progress with the DE activities and ideas. It seemed the less confident a student was, the greater was their resistance to learning. It was also possible that this type of attitude could manifest itself in less than helpful traffic behaviour.

The cultures of student behaviour between schools were becoming more noticeably different. It was a complex social mix in School A and I experienced greater levels of resistance there than I did in School B. It limited the impact I could make and it meant that I had to work more strategically to narrow the gap between teacher expectations and student ability and achievement.

In School B, I was able to achieve higher quality work with the students and more quickly, once I had established realistic boundaries and work expectations. The opportunity to work collaboratively was more likely to happen with students in School B.

My task from here was to find ways to improve learning for students.

5.8. Research Question Three:

What teaching methods and associated learning theories could assist in the development and implementation of a DE programme?

5.8.1. Teaching Methods

I used several teaching approaches in the classroom. Some were more effective than others. Involving students with challenges and tasks that enabled them to discover patterns was helpful. I used *group work*, *discussion*, *modelling*, *visual diagrams (graphs)*, *role-playing* and *direct instruction.* I planned more activities to include *discovery learning*, *propositional learning*, and *reality activation activities.*

I created opportunities for *group work* for students to share their existing knowledge and experience with others. Used in conjunction with *reality activation activities*, group work enabled:

a. reluctant students to become motivated: "it was the first time that he had really contributed anything to a discussion" (DET: A, July 17, 1996);
b. students to tap into their affective responses: "I'm in hospital because we were in a bad car collision. I'm so relieved that we are still alive. I was so frightened after the accident that she would be dead. Sadly a passenger in the other vehicle was killed; (School A student: July 23, 1996); and
c. some students to develop a good initial standard of work: "the answers... demonstrated fertile minds and imaginations, but also a realistic understanding of the possible implications of a crash" (RD: A, July 17, 1996).

Group work was less stressful for the students: "the class seemed to relax into the task much more" (RD: A, July 22, 1996) and could be used to build personal confidence.

I attempted to use *whole class discussion* as a forum for students to explore issues and assist them with the analysis of factors causing crashes. This was not successful in School A but was more successful in school B. Whole class discussion for students in School A was too threatening, therefore, most students clammed shut and contributed nothing. The silences were long and resembled a battle of wills. *Discussion* was successful in situations where numbers were smaller and there was

support from friends: "The class...was less inhibited than when matters were being discussed with the whole class" (RD: A, July 22, 1996). Reorganising friendship groups for group work, resulted in students not contributing or refusing to work with particular students. This caused more tension than the exercise was worth. Many were not ready for independent work.

Modelling was important for lower achieving students. On one occasion I tried to encourage discussion by modelling how *Kevins' Sentence* had affected me in terms of my feelings. However, expressing this level of honesty was too threatening for students in front of their peers. A modelling exercise was more successful when it did not expose the individual to a large group, as I found when preparing students to analyse crash reports. "I modelled the activity for the students by reading one of the reports aloud to the class and, as they listened, listed known factors from the report on the board to see what patterns might emerge" (RD: A, July 26, 1996). They then continued the activity in pairs with a clear idea of what to do.

I used *visual diagrams and graphs* on two occasions. The first time was to present information taken from a LTSA (1995c) document that used a spherical diagram to show factors contributing to social costs. I did not reinforce my interpretation of the diagram because it seemed clear and logical to me. However, student difficulties emerged when they compared information in the form of traffic statistics. I needed to repeat and reinforce such information before students could apply it satisfactorily as knowledge. Students in both contexts also found difficulty comparing road statistics between New Zealand and Australia in bar graph form. Students needed more opportunities to practice and process such information.

I was quite pleased to see that most students were able to show positive benefits from *role playing* activities, in particular, taking the role of an injured party or the accused. The rationale behind *reality activation* activities appeared to be working with most students. In addition, I had noticed that exercises involving *reality activations* were completed with greater flair in student diaries. This belied an earlier impression I had gained of students about communicating personal thoughts. I found instead that students expressed personal thoughts in diary entries that they were not prepared to share in the classroom. Students could be very honest and show levels of sensitivity not seen before without the critical pressure of peers to put them off. I

could see the importance of having a diary and encouraging students to express their ideas honestly in their books. Their private diary records were a more accurate indicator of student ideas than the spoken word had been.

While *reality activations* were more like personal role-playing exercises, a more public type of role-play emerged fortuitously from a group exercise comparing the perspectives of two parties involved in a crash. I asked one half of the class to take the role of the accused, who had consumed an amount of alcohol and fled the scene following impact. She had also been driving without a licence. The other party was the surviving member of the pair who had been run over by the accused. The task for the students was to explore the punishment given from each perspective. This activity was well done (see Appendix I, "Sample responses from students 4"). The activity could have been developed into a full-scale debate as several students explored the role they were given with obvious passion: "I feel the guilty party got off too lightly as my partner is now deceased because of an intoxicated, unlicensed driver who ran into us" (RD: B, July 24, 1996). Similarly, many student responses from the *accused's perspective* showed expressions of relief at the lightness of sentence and in the following example can be seen an awareness of the ignorance of the "trouble" the event caused:

> I think I was let off easy because once you go to prison, the status of getting another job is very hard. I didn't mean it. I didn't even see them. One minute they weren't there the next they were. I couldn't stop honest to God I tried, but now I have learned my lesson. Thank you for being so lenient on my...I didn't know it would come to so much trouble. (RD: B, July 24, 1996).

I used *direct instruction* at times. Sometimes referred to as "classroom instruction" (Lonero et al., 1995, p. 15) and "inferior to most other methods"...[for] producing "safer behavior" (p. 15), it did have a role to play in improving knowledge. I used it whenever the situation required a consistent approach for all students, which could be achieved quickly, and was not likely to be possible in other ways. The vocabulary sessions were an example. While most students may not have known the particular meanings of some words, learning new vocabulary gave students the opportunity first to share their knowledge as a class before clarification and definitions were recorded. Direct instruction could also act as a form of modelling. As students became more aware of expectations and the routines associated with the task,

the *directive element* could be progressively removed as intrinsic motivation and confidence increased.

Activities involving *discovery learning* were not successful to begin with. This approach had been planned as a feature of the *confirmation* phase of the programme. However, on one occasion, having modelled the analysis of crash statistics on the chalkboard, the task was of greater interest to them. As patterns in each report began to emerge, it encouraged them to become more intrinsically motivated and persevere with the exercise until it was concluded.

My use of *propositional learning* was linked with the interpretation of graphs described earlier, and scenarios, which provided dual perspectives. It was important for students to ascertain whether statements emerging from the interpretations of data were valid. More work using symbols was necessary so that students could become competent at assessing and interpreting meanings behind traffic and crash statistics and conceptualising information in abstract ways. When statistics were collated in the classroom, students gained a more comprehensive understanding of factors likely to be involved. Propositional learning opened up the possibility of different perspectives being valid and helped to reveal the complexities that can lie behind crashes and their causes.

5.8.2. Learning Theories

The specific learning theories that applied to the programme in the initial phase included *behavioural theory, cognitive theory,* and *social learning theory.* I could see that *errors of attribution* could also be identified from the responses of some of the students.

The activation of events, representing the consequences from crashes, acted as *operant conditioning* and had a positive impact on students' verbal descriptions of safety as *negative reinforcement.* Even after the first activity, many students showed a greater appreciation of the dangers associated with traffic in their written descriptions. It could be argued as a result of consequences being highlighted, that messages of self-caution for greater care on the road were more likely to emerge in the verbal behaviour of students.

> I thought that Kate's visit was very sad and it really made me think that one minute you could be a normal person living a normal life, and the

> next minute your whole life could be changed forever. (RD: A, August 2, 1996).

I could also see cognitive processes being utilised by students following *reality activation* activities in their measurement of risk, their assessment of danger and the way they expressed emotion. The level of shock, the sense of injustice and the feelings of empathy seemed to increase in tasks involving *reality activations* when surviving victims came to share their stories first hand and students could consider longer-term implications from the injuries they described. This was shown in statements like, "Kate's visit was quite unsettling, seeing how much power your [sic] controlling when driving a vehicle. It's really a type of weapon. When driving you can change lots of people's lives" (RD: A, August 1, 1996).

I could also see *social learning theory* being applied when visitors came to the class. The outcomes they had experienced and described were far more serious than the students could appreciate from their visual appearance. It was obvious, when accurate descriptions were given in infinite detail that a high level of concern was expressed and in certain cases, students were jolted into reality. One or two recalled that they too had been in similar situations but had been fortunate not to have been killed or injured, "Kate's visit did a lot for me. Now I can see the effect of careless driving. It would make me think twice about making a manoeuvre on the road that could be dangerous" (RD: A, August 1, 1996).

On the other hand, there were students who acknowledged little influence from visitors. Some were not moved by the tragedy of others and would continue, it seemed, to take risks unnecessarily. Each of the learning theories had a perspective to offer and it was becoming clearer to me that different strategies and a range of theoretical perspectives needed to be tried to reinforce similar ideas in different ways.

Errors in attribution could be seen most clearly when New Zealand and Australian traffic statistics were presented to students. Although New Zealand had a similar population as Victoria, Victoria had a better record of safety with fewer deaths and serious injuries in 1993 (Vicroads, no date, circa 1995). Students in both schools attributed causal factors to external sources such as the environment or vehicles when asked to give reasons for Victoria's higher level of safety. No student considered human factors as a possible cause in spite of me showing them an overhead transparency indicating 85-95 percent of crashes (LTSA, 1995c) could be

attributed each year to human factors. Students in both contexts found it difficult to imagine that Australians were safer on their road than New Zealanders were on theirs.

My chief concern as a DE teacher was for students who showed no evidence of wanting to change faulty beliefs and practices. I would continue to think about this during the next phase of the programme.

5.9. Research Question Four

Which teacher attributes were important for the delivery of DE in the classroom?

I found the demands on me as a teacher and the responsibilities associated with teaching and learning were wide and varied. However, to develop a well-balanced programme of interest to students and rewarding for me as a teacher, I needed to review what I had done so far to find out why there had only been limited progress.

The principal attribute, therefore, was to be self-reflective. It enabled me to reflect on and take ownership for some of the events that had led to the course not operating as well as I hoped that it might. I realised a checklist of the teaching-learning process would allow me to interrogate my practice systematically. My checklist highlighted *three* pedagogical components: *teacher roles*, *content areas*, and *student factors* to be considered (Appendix K) within which I rationalised four teacher roles:

a. As a curriculum manager I was involved with structuring the programme, organising content, activities, resources and timetabling. Administrative functions included the preparation of resources, the coordination of guests, visits, administration, and tracking student achievement.

b. As a *professionally qualified educator* I brought skills, knowledge, training and a practical experience of teaching and learning to the classroom using a unique style. I needed to have in-depth knowledge of the DE curriculum and requisite skills and experience in DE pedagogy so that I could assess and mark student work and review the quality and effectiveness of the programme.

c. My *personality* was linked to a teaching style in the classroom, which determined levels of approachability from a student perspective and revealed my encouragement for students. These personal qualities were tested in situations where student behaviour was obviously antagonistic or was manifest in other forms of resistance to learning. I also needed to make efforts to be positive and encourage antagonistic students.

d. As the *teacher as researcher (T/R)* I needed to analyse educational problems and to employ a critical and reflexive approach to the design, implementation, monitoring and evaluation of this study. I needed practitioner knowledge of each of the other roles and needed to be critically reflective to maintain a rigorous

design and minimise personal bias. Success was not necessarily assured at the end of the process but there was a chance of that improvement would occur at some level.

With these roles in mind, for the remainder of the implementation I needed:

- to understand the students, assess their abilities, strengths, weaknesses, and consider how they might be encouraged to achieve their best;
- to appreciate and understand what difficulties a student might be having so that a task could be modified to better meet the needs of the students concerned;
- to establish boundaries for behaviour, expectations for work and at the same time maintain the good will of the students;
- to have a repertoire of strategies for discipline, and student pastoral support to increase learning;
- a practical knowledge of students that could enable me to push personal boundaries as in Vygotsky's Zone of Proximal Development (ZPD) (Vygotsky, 1986) without turning students off;
- to manage student learning in terms of the attributes above so that the very best instruction was available for them;
- a flexibility to amend or adapt tasks, to change direction if required and to be open to suggestion from students and colleagues;
- to become involved with the on-going formative assessment of student progress that could feed information back into activities in the programme and to motivate students to develop greater independence;
- to take courage and explore the unknown, to take risks with new ideas and to admit when things had not gone as well as planned;
- an optimistic outlook that in spite of problems occurring and having to contend with difficult behaviours from students, there was hope for improvement;
- to thoroughly prepare work, lessons, and resources ahead of the lesson time;
- to locate resources that could be appropriate for the target group; bearing in mind their characteristics and needs;
- to challenge student ideas that could have alternative perspectives;
- to analyse problems and seek answers using different strategies;
- to expand ideas beyond the tried and true and to look for different ways of representing the same information for students;
- to adopt a belief that when things go wrong they can be resurrected by reflective analysis, a positive mind, and by sharing problems with both students and other professionals,
- to be objective and consider that fallibility is a contributing factor in any problem connected with teaching and learning,
- to be regarded as human, to be approachable and to have a sense of humour,
- to show enthusiasm for the curriculum subject, and the students. This could require me to deal strongly with behaviour that was negative and destructive for the learning of others. The students in School B were much more amenable and productive once I had dealt with unacceptable levels of behaviour and had described my expectations for them clearly.

Therefore, the foremost attribute to assist me to deliver DE in the classroom was to be able to reflect on personal practice, acknowledge that I had to take some

responsibility for the lack of progress, explore all contingencies involved with teaching and learning, and be prepared to consult other resources or people.

5.10. Research Question Five

What factors contributed to the effectiveness of a road safety programme?

Using the OECD (1986) statement on effectiveness as a guide (in Chapter Two), I was not convinced that the programme had achieved what it could achieve. Five factors were reported to have an influence on DE effectiveness (OECD, 1986):

i. validity of educational objectives,
ii. relevance of educational objectives,
iii. content and structure of instruction,
iv. instructional process, and the
v. acceptability of a programme for teachers and students.

By reflection, I found that.

- The educational objectives (teaching objectives) were valid and were achieved by most students, but I needed to make some of the content more relevant to student needs and interests.
- Although students were mostly unaware of the traffic safety problems faced by adolescents on a global basis I needed to increase relevancy for them by aligning goals more towards student licensing needs and interests while continuing to widen their focus and cater more for their learning needs.
- The structure of the instruction was effective but some of the content and activities needed modification for simplicity.
- Of the learner variables, instructional variables and social variables that impacted on the instructional process, I needed to:
  i address learning difficulties by developing more tasks of a *concrete-operational* kind and emphasising visual and kinaesthetic learning styles;
  ii review instructional variables to accommodate the needs of the students more by providing support for students to develop greater personal confidence; and
  iii build a more positive and confident classroom social culture through a greater emphasis on group work.
- The effectiveness of the programme in the classroom was not influenced by the acceptance of other teachers and students that I was aware of, but school policies limited the access to DE to students who were transition education students.

5.10.1. Theoretical and Practical Issues.

As I reflected on the implementation and my earlier assumptions, I revisited theory and consulted relevant literature associated with the educational process. I explored the following issues that I discuss in more detail in later chapters.

a. I found many of the attributes the students displayed were not consistent with characteristics of Piaget's *formal operations* stage (Inhelder & Piaget, 1958). The attributes of formal operations appeared to be beyond the cognitive capabilities for many of the students in this study. I found that the earlier *concrete-operational* stage of Piaget's cognitive theory, that described abilities to think in relational and relativistic terms, seemed to be more applicable to the DE students in both schools.

b. I observed that student behaviour was more highly peer-focussed and peer-reliant in School A students and concepts described by Elkind (1978) such as the *personal fable* and an *imaginary audience* (Conger, 1973) seemed to apply to more of them than School B students. In particular, I could see evidence in their greater preoccupation with self-interest, their greater self-consciousness in action and more anxieties about how they were perceived by others.

c. The search for a comfortable identity, as a part of what Erikson (1980) called a *psychosocial moratorium*, was also more visibly apparent in students from School A. Their comparative lack of cognitive interest was matched by higher level of school uniform contravention and a more noticeable interest in peer-related and social matters.

d. I noted that the characteristics of several students, who were reluctant to change their attitudes towards safety, conformed with adolescents' characteristics noted by Berg (1994). He described less academically inclined or motivated adolescents as having higher levels of risk-taking. Page, McDonald, and Ryba (1992a) have noted that adolescents also have the potential to display logical errors and biases that can flaw decision-making processes as can happen to many adults.

e. I found that by re-activating crash scenarios as *reality activation* activities, they also followed interactive learning principles (Wheldall & Glynn, 1989). The tasks were powerful educational opportunities for students to speculate and make intelligent guesses about missing information, a necessary part of problem posing and problem solving that was important for interactive learning (Collis & Lacey, 1996; Wheldhall & Glynn, 1989).

f. I realised that lifestyle factors, often related to socio-economic status, were possible influences on student behaviour contributing to a lack of personal

motivation (Berg, 1994; Laapotti & Keskinen, 1998). Lifestyle factors have been identified as important influences on risk-taking behaviour (Berg, 1994; Berg & Gregersen, 1993 in OECD 1994; VTI, 1996).

g. I became familiar with the theory of constructivism as another cognitive approach to learning in which *knowing* is described as an adaptive activity that arises as a result of selecting "from a compendium of concepts and actions that [have been] found to be successful" (von Glaserfeld, 1995, p. 7). Constructions of *viability* based on past experience (I can drive without a licence) showed up in the preparedness of some students to hold onto *misconceptions* of safety ("I can drive and so far haven't been caught...what's the big deal?"[my interpretation]).

h. I discovered that a physical classroom setting was another influence on the effectiveness of instruction when students sat around tables on high stools and were frequently engaged in discussions about non-related, peer-focussed social issues and were often reluctant to give their attention to the instructional area.

i. I found that *open learning opportunities*, which were designed for students to broaden their focus and give them independent learning opportunities, were too vague and threatening for many of them.

j. I was also reminded of socio-cultural factors and the importance attached by Maori of the need to work together in groups (Hamilton, 1989) and to explore tactile, kinaesthetic, visual, aural and oral strategies for learning.

k. I became more conscious of the need to reduce the dominant focus of the teacher if it was possible.

l. I needed to consider the influences on attitudes provided by strong peer cultures (Geuna, Ravazzani, & Perassi, 1995), the collective strength of pupils in the classroom (Delamont, 1983), the existence of *resistance* or *counter-control* (Sulzer-Azaroff & Mayer, 1991) and the potential influence of subcultures (Cohen, 1955; Parsons, 1978) within each classroom.

m. I appreciated that students in School A were effectively *negotiating the curriculum* (Boomer, 1982) so that it could be more relevant to their interests.

n. I believed that *social learning theory* could also be used to model successful driving experiences and positive driver behaviour rather than highlighting the consequences of road trauma.

5.11. Closing note: Adjustments for the next phase

Having outlined in detail the students' reactions to the initial lessons, I planned to make a number of adjustments to the programme, following my reflections and review of educational theory:

i. I would explore tasks on a more concrete-operational basis and would include a wider range of tactile, kinaesthetic, oral and visual experiences for learning;

ii. I would construct a three dimensional model of all factors involved in driving that could also become a summary of the *TAKE FIVE* programme.

iii. I would acknowledge the pedagogical needs of students more and realign curriculum goals to include the development of a mock roading system to help students revise the *Road Code.*

iv. I would acknowledge a constructivist approach to tasks and would explore ways to present the outcomes from road trauma that would counteract student misconceptions and faulty practices.

v. I would extend the use of social learning theory to include invitations to experienced drivers, not necessarily involved in road trauma, as positive social models for experienced traffic advice.

vi. I would focus on building up student confidence by organising tasks as small-group activities and by working alongside them more.

vii. I would use the three dimensional model of the driving task to encourage students to appreciate a longer-term view of DE and a global perspective for road safety.

viii. I would encourage students to process knowledge from classroom activities into more closed type activities such as confirming a checklist of crash reduction factors as a means of building confidence for dealing with open learning situations in the future.

ix. I planned to discuss with the students directly, what alternative directions in the course they might like to suggest which would cater for student interests more and invite them to consider how they could contribute in a positive way to a safer youth culture.

After making these adjustments, I was ready to continue with the implementation and embark on the next phase of the *TAKE FIVE* programme. This is reported as the second cycle of AR in Chapter Six.

Chapter 6: The First Implementation Continued

6.1. First implementation: Second AR cycle

This chapter continues the narrative of the first implementation, which was halted prematurely before the confirmation phase (second phase) of the programme was scheduled to begin. The description corresponds with the second major cycle of action research (AR) as shown in Figure 6.1. The exploratory focus becomes more explanatory once student learning patterns and problems associated with them had been identified. I describe activities more systematically as small AR exercises, identified as small circles in Figure 6.1.

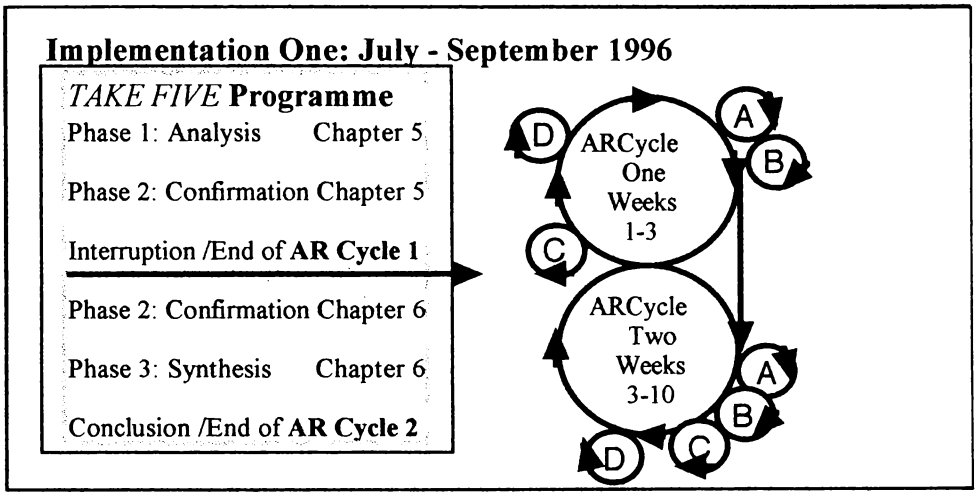


Figure 6. 1 Overview of Programme and Action Research for Implementation I – 1996

I then compare student responses from the post-implementation questionnaire (Q1b) with responses to the same questionnaire (Q1a) given at the beginning of the implementation, before reporting on the analysis of data from the student feedback questionnaire (Q1c).

I conclude the chapter by reviewing each research question in relation to the implementation then comment on theoretical issues and relevant literature in preparation for the second implementation of the *TAKE FIVE* programme which is described in Chapter Seven.

6.1.1. Introduction

The programme was difficult to implement and keep synchronised in each school by this stage. School B students had four 60 minute lessons a week while students in School A had five 50 minute lessons a week. School B students tended to work more industriously but class-time was more prone to erosion by interruptions.

This happened when shorter *lunch times* occurred in winter that I was not told about, and when students involved were absent as players or spectators for inter-school sports visits. Interruptions caused by equipment failure, no electricity, and instances of students' problem behaviour highlighted how external factors could impact on effective delivery of a DE programme. Interruptions were more critical in disrupting student learning in School B with fewer lessons scheduled for each week. The combined effect of similar factors may have contributed in some way to the lack of success other DE programmes have had. Under these circumstances all I could do was to improvise and adjust to the circumstances that prevailed.

6.1.2. Confirmation Phase: Phase II

The rationale behind the *confirmation* phase of *TAKE FIVE* was for students to use the information presented to them in the first phase as a basis for *confirming* crash causes. By helping students to review crash factors, I hoped they might understand traffic statistics better and confirm patterns that might suggest strategies for safer traffic behaviour in the future.

6.1.3. Continuation

Through reflective praxis several factors were highlighted that I could consider for further improvement. First, I was responsible for classroom management and was the only one able to make adjustments that could improve the programme. I had underestimated the needs of students who demonstrated by their behaviour the need for encouragement and to be nurtured more carefully through activities. By consulting other educational literature, a *constructivist* concept of learning offered me a new insight into the way students could *re-construct* perceptions of safety in relation to new information being made available to them. I was also aware of the importance and the central role of the teacher (Eggleston, 1980) but had not recognised the extent to which I needed to focus on student learning rather than instruction or presenting content. The School's Council Report (1975, in Eggleston, 1980) acknowledged that:

> all worthwhile proposals for curriculum change are put to the test in classrooms and only come to fruition if the practising teacher has the resources, support, training and self-confidence to implement them. Teachers are in the unique position to know and understand the needs of pupils and from them should come the principal pressure for effective programmes of teaching and learning (pp. 6-7).

Second, a number of contingencies external to the programme content, like those described in School B, had impacted on the educational process. Some corresponded with *non-educational* (Dewey, 1910) managerial matters and others were *mis-educational* (Dewey, 1910) like absenteeism which impeded or prevented learning occurring for certain individuals.

I acknowledged also that I had held an expectation of student academic abilities that was not accurate. Weston (1985) had noted that teachers who were successful at teaching lower-achieving students, were those who saw them as "'real people' with a personality and feelings, not a handicap or a label. They are flexible and patient. They teach student first and subject matter second" (p. 79). Dyson (1987) also noted that curriculum innovation has tended to concentrate "far too much on what changes we wish to bring about, and far too little on the way that changes are to be decided upon" (p. 96). It was obvious to him that if the curriculum is regarded as a static entity then it is

> formulated without reference to specific children...[and] will inevitably create a group of children for whom it is, for whatever reason, unsuitable; it will require those children to be called 'stupid'; and it will call into being remedial departments to do something, if not about the stupidity itself, then at least about its most obvious manifestations (Dyson, 1987, pp. 99-100).

I quickly reviewed operational boundaries and my expectations of students in School A and considered factors that Boomer (1982) cited relating to *natural learning power, how it can be turned off, being practical, trusting the learner* and *how a more meaningful approach to learning might be negotiated.* As a condition for establishing a real and firm basis for classroom interaction and learning through face to face encounters, I also acknowledged that "both sides of the interaction need to come clean" (Reid, cited in Boomer, 1982, p. 2). I became aware of the barriers that were often put in place by the student that prevented a more progressive operation occurring in School A. How to identify and reduce the impact of barriers, often having a root in learning difficulties of various kinds, was another hurdle to cross. The task was not simple. "It is not merely a matter of teachers varying their approach, like skilful performers before a listless audience; it is a matter of (understanding) a child's learning repertoire as well" (Boomer, 1982, p. 7). I had not acknowledged student needs enough to engage them at their ability levels. I had kept my focus on the delivery of content foremost. However, while I had expected more in terms of

progress, events that occurred during a lesson in School A in week three meant that from my perspective, students needed to appreciate that I had rights as a teacher as well.

> I expressed my disappointment at the events and lack of progress made yesterday. I mentioned that I felt that they had abused their rights as students, and my rights as a teacher...I asked them if it was my right to expect the best from any student [There was no dissension]. If it was good enough for me to give of my best in the classroom, was it not a reciprocal right to have students give of their best? There was no point of conflict with these ideas (RD: A, August 8, 1996).

Once this point was expressed, I could support them more in their learner's role.

> I acknowledged that they might not always understand what I was doing or how it might relate to the goal of equipping them with strategies for safe driving, but it was their right to ask for clarification for their greater understanding and direction (RD: A, August 8, 1996).

The expectation held by many students in School A, that the course would focus more on licence concerns and the *Road Code* gave me an idea to assist them further by developing a simulation exercise using miniature cars on a mock road grid. This activity and each of the activities reported in the following section reflected my increased concern for students and the learning situations I observed in the first three weeks. I realigned my teaching goals with student learning methods and DE needs. Each activity becomes a small AR cycle in itself within a major AR cycle, as shown in Figure 6.1, and I report them sequentially as they were introduced using capital letters (A, B, C, etc.) as indicated below. Each small AR cycle includes an *introduction* and *rationale* as parameters for planning, the *procedure followed* and *observation / data* as actions and observations, while *explanations / interpretations, a summary* and *modifications* result from my reflections on the process and outcomes in preparation for the next implementation.

A. Road Code simulation exercise

Activity: This activity was a practical, kinaesthetically-based, simulation exercise using mock road grids designed by the students, on which small vehicles were manipulated so that students could demonstrate driving manoeuvres from the *Road Code.*

Intended purposes / rationale:

For students:

- to demonstrate knowledge and competence in traffic by having students hypothetically "driving" from one area to another;

- to help students gain confidence revising the *Road Code*;

For the teacher:

- to meet student requests for more licence support and *Road Code* revision;

For the researcher:

- to explore the extent to which I could develop a collaborative partnership with the students in this exercise.

Procedure followed: I explained to each class that this activity was an experiment, that I had not tried before and I was neither sure whether it would work nor would have value for them. I asked them to record in their diaries that we would evaluate the activity together later on. The students constructed road plans in small groups, at first using a roll of blank newsprint paper and later using surplus cardboard refrigerator cartons. Once road plans had been completed, students were asked to design *route maps* so that they could practise *driving* and could apply their *Road Code* knowledge. Two tasks associated with route cards were drawn up.

> **1. *CARD DRIVER*:** (Each student) Follow the prescribed routes to arrive at different destinations, practise the road rules and show compliance.
> -This activity involves a level of trust and cooperation
> - Record any problems you have in your books.
> **2. *PEER PAIRS*:** (In pairs) With a partner check road safety rules that need to apply at locations throughout your routes. The student driving a car should explain the rules that apply at any one time on the grid and in alternative situations during the journey (RD: A, August 19, 1996).

Observations / data:

- More students were on task than previously.
- More students were actively engaged in the task.
- Differences in the responses of School A and B students remained apparent.
- A less formal classroom environment developed.
- Girls were less likely to respond positively to the task.
- Some responses were *inappropriate* with regard to safety and task direction.

Explanations / Interpretations

i. The novel approach to revising the *Road Code* and the practical nature of the activity had a positive impact on student motivation. This was particularly so when DE lessons were scheduled for last period during the day. One boy from School B stated "this (activity) was good Sir!"

ii. More students appeared to be competent and confident at completing this task with its practical, kinaesthetic and experimental features than they were with activities without these elements.

iii. Girls showed less interest in this activity than boys. One girl thought it was childish to play with toy cars or blocks of wood. I wondered whether the collective reactions of girls in School A inhibited boys' enthusiasm in School A, as boys in School B were more highly motivated and enthusiastic about the task as they considered design elements, possible improvements and factors that could increase effectiveness.

iv. Some difficulties in the development of a new task, like weaknesses in design, reflected the lack of time I could devote to preparing resources adequately and foreseeing contingencies that lay ahead. I had no exemplar of this activity prepared because of the emergent nature of the activity.

v. Most students responded positively to choice between reading/writing and practical work, developing what to put on their road grid and choosing who they would work with.

vi. Some inappropriate responses from students were found:

- when students presented unsafe and risky suggestions (as if they had an *imaginary audience* of peers):

> ...then I head back to Moe's pub to get plastered before going home. I then pull out and burn right toward the train track. I stall the car on the tracks and get smashed by a train (RD: B, August 14, 1996).

- when students had not listened carefully enough, were distracted, or failed to understand the primary intent of the activity.

> One student, having designed a hot rod from a block of wood, had drawn a drag strip as the first image on the paper. I had to question his understanding of the task and asked him did he really think that there was a need for a drag strip on a public road system. "Can you describe where such a facility is described as a part of the *Road Code*?" (RD: B, August 8, 1996).

vii. I was not entirely clear whether *open* or *closed* activities were preferable. In one sense, School A students enjoyed the design aspects of planning a new (physical) road grid (open situation), but they were less motivated to explore ideas (open) that emerged from the activity where there were few guidelines. It seemed that by providing well defined guidelines (closed situations), like putting information into categories that were given, students found tasks easier to follow and it gave them a clearer indication of what was expected of them and some indication when a task would be completed.

> Starting from the Green house, going to the pub and then to the dirt-track and then to the dairy. Go to Burger King, to the supermarket, go back to the pub and go to the drag racing. Go over the bridge to the League match at the park before visiting Raj's dairy and then home. (RD: B, August 14, 1996).

viii. The less formal, more collaborative elements of the exercise had positive benefits for students and in particular it suited the majority of students in School B from whom good ideas and responsible attitudes to safety emerged.

> ...they took stock of some engineering difficulties. When there was an entry into the BP station, there was no way to get back out onto the highway. Another suggestion referred to the position of the entry and exit at a shop which could be dangerous according to the flow of the traffic (RD: B, August, 14, 1996).

ix. Several students in School B were keen to offer opinions about the success of the activity from their personal perspective and were more collegial in their approach.

> • I think it is working OK. It has the realism of a road but the people are not realistic. Have police, drink drive checkpoints, officers on point duty at intersections. People controlling cars around intersections to cause problems for people passing through.
> • Is it working well? Yes I thought it did. Everything that is on the paper could be encountered in real life.
> • I think it was working quite well and there were no problems on the road.
> • I think it works alright, but we need to suss out some problems to make it work better (RD: B, August, 14, 1996).

Summary: The activity helped most students to revise their knowledge of the *Road Code* and demonstrate it. One student admitted gaining extra confidence because "you could practice without the danger of crashing and being hurt". Students also responded to being more responsible for their own learning than in previous activities.

Many students were more highly motivated but the lower engagement level of girls required me to realign teaching goals accordingly.

From a researcher's perspective, some School B students embraced the concept of collaborative partnership but in terms of long-term, sustainable involvement, too many students were not ready nor able to operate in a classroom situation that emphasised collegial responsibility and learning partnerships with a teacher for it to work.

Modifications:

I made several modifications before introducing the activity to School A. I modelled the development of route plans, located large refrigerator cartons to be cut up for road plans, and designed and cut intersection templates out of 2mm chipboard. An improvement to consider for the future was to design a checklist of construction

stages (beginning with locations first and then the roads to serve them) and a checklist of traffic situations that arise from the *Road Code* revision sheets.

B. Haiku

Activity: I was keen to explore the possibility that students might make deeper connections with a local family's triple fatality crash through Japanese haiku poetry as a specialist teacher of the arts.

Intended purposes / rationale:

For students:
- to explore personal feelings about a genuine tragedy at a deeper level;
- to focus these feelings and ideas into a simple three-lined poem;

For the teacher:
- to offer genuine support to the victims of road trauma;

For the researcher:
- to explore the potential for using *the arts* to support the safety messages of DE.

Procedure followed: I read the crash report while the boys listened. I invited the students to consider writing a simple haiku poem to express consolatory thoughts for remaining family members. I introduced the concept of a three lined 5 -7 - 5 syllable poem and following their questions and concerns, modelled one on the board. I developed key words through student brainstorming (*sympathy, sorrow, loss, sadness, lost, lonely, feeling)* and provided various starting lines to work with (I feel your sorrow...; Hearing your story...; Words in the paper...; Being here today...).
I concluded the activity by taking two A4 size sheets, folding them in half to make a small booklet and asking the boys to write their poems inside (see Appendix N).

We heard your story
about your tragic loss.
We send our regards.

Words in the paper,
We feel sorrow for the loss.
We will pray for you.

Observations / data:

- All students were able to produce haiku.
- The quality, depth and sincerity of thought I found were surprising.

Explanations / Interpretations

i. The class embraced the task once I had given appropriate support and encouragement (modelling, key words, starters, personal one to one assistance). During the first lesson in the day (Tuesday) more students were present and they were fresher and more receptive. A class member who was at school with one of the deceased added authenticity to the story which helped to counteract the

impersonality of crash reports from newspapers which are often portrayed objectively by concentrating on numbers and statistics.

ii. The activity was inherently simple and allowed students more time to achieve quality responses in terms of sincerity and depth of feeling (deep learning) by expressing personal thoughts. Students were also pleased to complete an activity and record their poems in the booklet in their neatest handwriting.

iii. The haiku medium reinforced the notion of safety by acknowledging the tragic consequences of a crash. It also encouraged students to consider the outlook of others at a deeper and more personal level than they would have been able to do previously.

Summary:

I felt the activity was an effective *reality activation* exercise counteracting student egocentrism by having students acknowledge the feelings and needs of others.

Modifications:

I was not so sure that the students in School A would be as receptive. However, having worked the activity through with School B already, I refined the task more systematically in preparation for use with School A should the opportunity arise. I report this later.

C. Vocabulary

Activity: This activity was first introduced in Chapter Five.

Intended purposes / rationale:

For the students:

- To provide students with language and terms associated with DE.
- To give students more confidence in a wider use of language.

For the teacher:

- To facilitate deeper learning about cause and effect, antecedents and consequences and give confidence for discussion.

For the researcher:

- To prepare students for making cognitive links with abstract ideas.

Procedure followed: I continued introducing key words that emerged from newspaper articles, traffic research and statistical reports (like *crash factors, active responses, and hazard perception*) to students. I used a three-stage process involving student guesses of meanings (aural, cognitive), a chance to spell words and to transfer accepted definitions into their diaries.

Observations / data:

- More students gained confidence at speaking with visitors or contributing to discussions, taking risks at spelling words or offering meanings and incorporating terms into their verbal language towards the end of the programme.
- A range of students' writings revealed more depth through clearer definitions of abstract ideas and compound sentences and showing cause and effect.
- Students began to make links between concrete ideas and abstract representations of them.

Explanations / Interpretations:

i. The new language base gave students a platform from which more complex concepts were constructed and developed. The students showed increased confidence when guessing meanings and spellings, incorporated previously unfamiliar terms into their verbal language and were more prepared to speak with visitors or contribute to discussion. A routine task helped students build up confidence and competence through regularity and repetition. Discussion occurred in School A at times when it had not been possible before.

ii. I noticed that more students began to express compound ideas like cause and effect when giving definitions of words. This replaced limited single word synonyms given at the beginning of the course.

iii. Several students expressed meanings more lucidly with new vocabulary. Some words provided links to abstract ideas like driver responsibilities and human factors, which I planned as a part of a *three-dimensional model of the driving task* (*3DMDT*) to be described later (see Appendix O).

Summary:

Improved understanding of ideas, cause and effect and an ability to express ideas more clearly in compound sentences were noted. Students asked more questions and cognitive links between abstract ideas began to strengthen.

Modifications:

The new vocabulary routine provided learning benefits for students. I decided to extend the daily routine task to *crash analysis* for the next implementation to assist students to gain confidence in discovering patterns in crash factors.

D. Experienced driver interview and survey

Activity: This activity was extended from classroom interviews with crash victims introduced in the first part of the programme. I invited experienced drivers in

this exercise to share their road user experience using an eight-question questionnaire (Appendix P) to introduce the *synthesis* phase of the programme.

Intended purposes / rationale:

For the students:

- To identify positive goals in the driving task;
- To involve students in interviewing an adult they knew;

For the teacher:

- To introduce students to the effects of human factors in traffic;
- To collate and analyse the data collected with the students;

For the researcher:

- To monitor the activity for effectiveness.

Procedure followed: I modelled how to complete the experienced driver survey in School A by interviewing a classroom teacher from the staffroom. I used eight questions to highlight human factors of speed, attention, frustration, positive habits, and memorable events for the teacher. I recorded my responses on the board for students to transfer into their diaries. I then invited students to interview an experienced adult driver in their home community using the same questionnaire. We would then share, analyse and collate responses in class to identify patterns and trends in their replies.

Observations / data:

- Most School A students produced few data and a range of excuses was given for not attempting interviews.
- Most students in School B completed the task.
- Key human factors were highlighted.
- Patterns were noted in the data.

Explanations / Interpretations

i. Two returns from twenty-three students in School A were insufficient data sets for planned class work. Excuses were offered: "I forgot to take the form; I was working late after school; I lost the form; too busy with other homework". Sufficient photocopies of the questionnaire had been made but more forms were required for the next day.

ii. My retention of student diaries, to monitor progress, may have contributed to fewer responses, although I had asked students to record answers from each question on a blank refill page. I was reluctant to let the diaries out of class, having experienced similar students over the years. One or two students had already taken diaries home and in spite of my requests for them to return them, days elapsed before they were returned or they were not returned at all. Students

used them for other subjects, often returning with other subject material in them or with pages removed.

iii. A further modelling session yielded only three more completed surveys the next day and a challenge from one student saying "we don't get homework in DE". It seemed that homework was regarded by many as an imposition rather than a chance to prepare information for the class to work with the next day. It was possible that some students really lacked the confidence or skills to interview someone on a one to one basis.

iv. I tried to hide my displeasure and was at a loss to understand why such work was not done for the second time. Some admitted they had forgotten to take the list of questions home again, therefore, had no questions to ask. When the DET probed further, there was no one in the class with any valid explanation on why the work was not done (RD: A, August 27, 1996).

v. School B students were more reliable at doing homework. Over 20 responses were completed in one evening and all students had contributed some data to the survey. As a class they seemed to have a more conscientious and confident approach to the task and appeared more genuinely interested in the outcomes and the patterns to emerge from the survey. Perhaps they were more practised at this type of activity.

vi. Students from School A also found difficulty framing questions for an extension activity to interview a parent about his job as a fireman in crashes. It was not easy for students to clarify what information was still missing from what had already been asked, although for most students abilities to think and apply information had improved over the duration. They experienced difficulties rephrasing questions to extract further information when a visitor was restricted to answering 'yes' or a 'no' as had occurred with Jacqueline in Chapter Five. It appeared more difficult for these students to undertake an *open task* to find out what a fireman's job entailed with no guidelines. It was easier for them to accomplish a *closed task* like extracting crash details according to headings that had been provided already. The unknown elements in an open activity seemed to create greater anxiety for students and their concentration and behaviour often deteriorated.

vii. Once School B data were combined for analysis with the three samples from School A, some patterns of consistency were noted. Although the survey was not of the highest calibre, due to inconsistent data sets, the data collected represented

the genuine work of students. It was the first investigative task where students had been asked to gather information from beyond the classroom and had relied on students being able to work independently, which was not a strength of students in School A.

Summary:

This task presented positive traffic ideas based on driver experience and provided a balance to an earlier emphasis on the consequences of road trauma. Responses gave positive support for students' lack of experience and gave an experienced person's perspective on *human factors*. Although students in School A were given more support to interview an adult known to them, the majority appeared to lack the discipline or confidence necessary to attempt the task for homework. Some consistent patterns were revealed in the data and as a *reality activation* task, the experience provided positive support for safety in keeping with social learning theory.

Modifications:

Encouraging students in School A to interview experienced drivers was a challenge yet to be overcome.

E. Three dimensional model of the driving task (3DMDT)

Activity: This exercise was a new idea and emerged through reflective praxis as I reflected on previous experiences with adolescents and compared their ability to understand abstract concepts influencing traffic outcomes with these students. I wanted to develop a model that would show at a glance, all factors contributing to road trauma that could be linked to the task of driving. I felt that an important aspect of the *confirmation* and *synthesis phases* of the programme, was for students to learn how crash factors impacted globally at a national (*world-view*, RTA, 1997) level. I acknowledged that responses from most students expressed a *local* interest in "wanting to drive" and "get a licence". A three dimensional model could present crash factors, road user characteristics and strategies for safety in a visual, three-dimensional form. In this format the model was also capable of showing how *local* driving tasks could be linked to a broader, more *global* traffic perspective. It could help students appreciate the rights of other road users. The model was designed to represent someone hypothetically driving from a given destination, like their home, to another, like a supermarket (Appendix O).

Intended purposes / rationale:

For the students:

- To gain an overview of the factors and links between them that had an influence on the driving task;

For the teacher:

- To present students with a comprehensive overview of both the factors mentioned above and the content of the DE programme;

For the researcher:

- To assess the value of a three-dimensional model for students.

Procedure followed: I introduced this exercise differently in each school. Students in School B were initially involved with cutting traffic symbols out of surplus polystyrene packaging using a hotwire. The learning task was complicated for students to fully comprehend because of the absence of exemplars of the model and my lack of clarity about how the model might eventually be structured. Students were unsure of what a *global perspective (worldview) of a driving task* might be and they lacked the knowledge and insight required to complete the task to a necessary level. Therefore, I adopted a more direct approach with the students in both schools and asked them to summarise key words from the model in their books. I discovered that even this exercise was too complex for most School A students without direct input from me.

> I asked the class for ideas about what to write (to describe each factor). Who would like to start? I began writing on the board... *the driver*... and paused for someone to begin. *Yes?* was a student response. No one else spoke. I figured out that they just wanted me to tell them what to write. They were quite happy writing sentences in their books from the issues we had discussed and summarised. When I began helping them to think about each word and what it might represent, they ... relaxed more. The DET reinforced this by saying that the kids in lower academic classes were quite happy just copying sentences down whether they understood them or not (RD: A, September 3, 1996).

School B students meanwhile continued to develop three-dimensional shapes for group constructions of their model. To save class time, I constructed a prototype one weekend and presented the model to each class, highlighting key aspects which also acted as a course summary.

Observations / data:

- School B students were mainly enthusiastic and responded positively to the practical and kinaesthetically creative opportunity.
- School A students were harder to motivate and keep on task.
- Many students found the model a useful aid to understanding the driving task.

Explanations / Interpretations:

i. School B students showed greater enthusiasm about the opportunity of making a three-dimensional (3D) model and were more supportive of new ideas and approaches. They not only appreciated the practical opportunities but also took responsibility for voluntarily vacuuming and tidying the mess left after the activity.

ii. School A students by contrast were harder to motivate, to keep on task and to show cooperative behaviour. They were less committed to individual projects and messed about more during practical assignments. The girls had been less supportive of practical projects, so it was better for me to assist them more directly with summary definitions first, in preparation for my initial presentation of the 3D prototype.

iii. Many students in both schools found the model helpful for understanding traffic factors linked with driving. DE necessarily involves the study of abstract concepts like driver responsibilities. Global factors that contribute to traffic safety became more obvious to students in a visible or *concrete* form on the model. In addition, key traffic-related terminology (vocabulary) and links to crash factors could be identified and tracked on the model. An obvious advantage, from a pedagogical point of view, was that the elements on the model largely represented a summary of programme content.

Summary:

The model gave students an overview of factors involved in the driving task and the links between factors (see Appendix O). Positive student feedback noted that "it was interesting, as I hadn't ever done that before; [I] was able to put on a diagram what a course was". The model served as a remedial function for students who were slower or had been absent as each component could be viewed and discussed on the model as a programme summary.

The model also supported students who had difficulties comprehending abstract concepts as they could see elements in concrete form on the model itself.

From a research perspective, it was worth making further adjustments to improve effectiveness.

Modifications:

I used nylon filaments to link elements together on the model, to demonstrate a process of hazard perception checks and recognise relationships between causes and

effects. By loosening the tension I demonstrated how performance might be impaired by factors like fatigue and alcohol. As a result, students revealed a more detailed and deeper understanding of factors in their written work: "if you are concentrating then you are alert at all times to distractions and tiredness". However, not all students were able understand links between factors.

I realised that too much time had been spent on developing symbols, therefore, I planned to construct the model sequentially during each lesson the following year. It would allow me to explain the links between each contributing factor more clearly.

F. Off-campus visit

Activity: This activity arose from my need to develop more appropriate activities for students in School A. I organised a visit to a local vehicle salvage company as the DET: A and I had access to school mini-buses for transport not available in School B.

Intended purposes / rationale:

For School A students:

- To have visual (concrete) reinforcement of the consequences of road crashes.
- To gain crash-related information from other professionals involved with crashes.

For the teacher:

- To provide students with proof of outcomes from crashes;

For the researcher:

- To assess the value of a community supported safety exercise.

Procedure followed: The DET and I drove students in two mini-vans during a DE period that ran into a lunch break. We also visited a vehicle auction en route to see cars being bought and sold but this goal was subordinate to the visit to the salvage yard.

Observations / data:

- Boys were mainly interested in the salvage firm.
- Girls were not particularly interested in either visit and lamented the fact that the visit impinged on part of their lunchtime.

Explanations / Interpretations

i. More boys than girls were interested in the salvage firm. They commented on the type of vehicle, the extent of damage and imagined the chain of events that led to crashes and their aftermath.

- was interesting because of the big Valiant Charger that had been in a crash;

- when I walk into WS it make me think of lots of thing [sic] about all these accidents and what it done [sic]to the cars;
- I learned from there every car that have [sic] recently crashed are taken in there so they could find out the story behind the crash.

ii. Several girls lamented the fact that the visit impinged on their free lunchtime.

-The visit to WS was quite boring, maybe if it was period three and we had more time it could've been better. But it was pretty boring.
- Boring because we never stayed for long and it would have been alright if it didn't take up our lunch break.

Summary:

Students could appreciate the devastation of high-speed impacts more realistically by viewing vehicles involved in collisions, however, from a teacher's perpsective, because of the attitude of some students and their complaints about a loss of lunch-time, the visit was not as effective as I had anticipated it would be. From a DE research perspective, it was probably better to use video excerpts and visits to the classroom by experienced drivers instead.

Modifications:

Student comments were not positive enough for me to consider such trips as a priority for the future. It had taken extra time and effort as a teacher to organise and because of the lack of positive support from students and time constraints that would operate in the following year, I chose to discontinue the activity.

G. TAKE FIVE Checklist of traffic safety *(*T5CTS*)*

Activity: This activity involved the development of a checklist from the *synthesis phase* of the programme. I rationalised human factors "contributing to accidents" (LTSA, 1996, p. 49, see Appendix C) from fourteen down to five as an aid to memory and possible basis for a code of safe practice for road-users in general. As was explained in Chapter Three, there were too many crash-related factors to recall at once and they needed to be reduced to a manageable number. In this case I chose five.

Intended purposes / rationale:

For the students.

- To synthesise and simplify safety suggestions towards a *TAKE FIVE checklist of traffic safety* (*T5CTS*) as a part of the *3DMDT*;

For the teacher.

- To develop a simple safety strategy for students from the study of crash factors located on the *3DMDT*;

For the researcher.

- To assess the value of a *T5CTS* that could be applied in traffic situations.

Procedure followed: I encouraged students in each context to consider the five most likely factors that could lead to greater traffic safety in their roles as learner drivers. In line with discovery learning principles and the *synthesis* phase of the programme, I asked students to "synthesise safety ideas" into a *T5CTS* from the activities and course information given.

Observations / data:

- Students identified the five safety factors that could become a *T5CTS*.

In School A, this began when one student was summarising the factors contributing to the *3DMDT*. He quietly observed that there were patterns in all of the crash factors.

> I suggested (to the class, as had been noted by the boy P) that there might be five key words from the work completed in the course which could summarise all of the suggestions for safety considered during the course. The key words did emerge as speed, courtesy, communication, concentration and alcohol (RD: A, September 5, 1996).

Students in School B began to offer suggestions and the following words were mentioned: *courtesy* (first one mentioned), *alcohol* (next), and *communication* were mentioned. The bell went and I left them with the task of thinking what the other two might be (*speed* and *concentration*). The next day (Tuesday) I asked the boys to consider what the remaining key words might be and they gradually emerged with help from me.

Explanations / Interpretations:

i. The students in School A were able to ascertain the five key factors with less help than the boys in School B. School B students had been more independently involved with the construction of three-dimensional models, therefore, had not had the direct input of content that I had been able to give students in School A.

ii. The importance of the exercise for students was to enable them to synthesise the information in their own way and at their own pace rather than being told by me as the teacher. Being able to guess the words confirmed to me that the course had covered important safety elements with students.

Summary: Students were able to synthesise safety suggestions into a *T5CTS* as the final component in the *3DMDT*. From a teacher perspective, student descriptions of each of the five words showed a greater student depth of understanding of cause and effect expressed in increasingly more complex compound sentences.

- The speed done in any condition on the road, the faster the more dangerous.
- Being able to have a clear mind to concentrate on the road and other road users.
- Indicating etc. stops confusion and misunderstanding (RD: B, September 10, 1996).

From a researcher perspective, these signs of progress highlighted the potential for the *T5CTS* to be tested as a possible safety strategy beyond the classroom.

Modifications: I was satisfied with the way words had been recalled. I planned to design a banner that could be left in the DE classroom during the implementation next year to create greater interest in discovering the safety message behind the phrase *TAKE FIVE STAY ALIVE.* Students would be encouraged to guess the meaning at any stage throughout the implementation.

6.2. Synthesis and Application Phases: Phases III and IV

The *synthesis* and *application* phases of the programme did not follow as I had planned. I had slowed down the delivery of the programme to broaden the area of content to be covered and to cater for student learning needs more. I also required more time to develop efficiencies of practice during the *confirmation* phase (described above) because of new and untried tasks. A slower rate of progress had advantages and disadvantages:

- Students could develop ideas within activities more easily but sometimes I needed to bring ideas back into line with the aims and objectives of the task.
- It provided more of an opportunity to be creative, to pursue alternatives and allow for trial and error.
- Students showed more contentment with tasks but diversions still occurred.

Other factors:

I realised that the *application* phase (last phase) of the programme would not be accomplished fully because of the lack of time, the capabilities of students and no exemplars available for the arts-mediation task. Therefore, the *synthesis* phase was mainly devoted to the development of the *3DMDT* and the *T5CTS.*

I had explored an *application* phase task earlier with students in School B that involved the writing of haiku poems in memory of local Goodwin family members (a mother and two teenagers) who perished in a head-on collision at the time. In the last week, however, a similar opportunity to write haiku poetry occurred for students in School A in line with the objectives of the *application* phase. The catalyst for the

activity was a crash involving the mother of a School A student who had driven off a small bridge one night during very wet weather and had drowned. The chance to provide support for a fellow student (who was not a member of the DE class) and his family members was worth taking. I had prepared the task more carefully (see Appendix Q) knowing the type of student I was dealing with and the difficulties students had faced in School B.

H. Haiku poem in School A

Activity: Refer to Haiku activity 'B' earlier in this chapter.

Intended purposes / rationale:

For students:

- to explore the expression of personal feelings for surviving family members;
- to focus these feelings and ideas into a simple three-lined poem;

For the teacher:

- to appreciate the perspective of the victim (dealing with the consequences) and offering support;

For the researcher:

- to explore the potential for using *the arts* to support the safety messages of DE.

Procedure followed:

I spent a full period introducing the haiku-poem activity but little had been accomplished by the end of the first period. Several students had missed the introduction and build-up for this activity. Therefore, the rest of the class was encouraged to complete the exercise with assistance from the DET while I introduced the Haiku task to the students who had returned.

Observations / data:

- Students struggled to get the task completed.
- The task was more difficult to complete.
- Students eventually achieved a high standard of work.

Explanations / Interpretations:

i. The lack of progress of students in School A was possibly due to a difficulty they had appreciating how the activity related to a DE task and understanding what links the activity had to safety. We discussed the event prior to the exercise for ethical reasons and determined that no one had direct links with the deceased or the student. As the teacher, I concluded that students' difficulties with the task were not bound up with the task itself but rather motivation. Having reached an impasse, I was reminded of a negotiated agreement I had made with the class to visit a local go-kart track on the last day of term. Although the visit did not

conform to purposes of the DE programme, I had agreed to take them partially as an incentive and to develop better student-teacher relationships. However, their lack of commitment to Haiku writing during the second day prompted me to stop and inform the class of the following:

> I voiced my displeasure to the whole class at their lack of application. I mentioned that I was withdrawing my support for the outing on Friday, (which was optional) unless there was a marked improvement in their performance. I stated clearly that I would review my support for this activity only after having checked and signed each student's work at the front of the classroom. This persuaded the students to settle down quickly and produce work of considerable thought and quality. (RD: A, September 17, 1996)

ii. Students were immediately committed to the task and previously reluctant students achieved considerable measures of success. I revoked my withdrawal of service once each member of the class had met my minimum requirements for the task and drove the students to the go-kart track.

iii. I realised that it was possible for such students to achieve at a higher level than they were prepared to accept but it required more effort and energy from me as the DET (See below and Appendix Q). The results were of a similarly high standard as those from students in School B with special, sincere messages of support for family members.

Sample Haiku for O'Hearn family from the School A Driver Education Class

Hearing, your sorrow,
squeezing the hurt from my heart
feeling so helpless.

Hearing your story,
made me think how life can be
so unforgiving.

Hearing your story,
I was crying for your loss.
My thoughts are with you.

Being here today,
living without your laughter
makes me want to cry.

Summary:

I was disappointed to have to use coercion to achieve these results but the outcomes they attained suggested to me that my actions were warranted (see Appendix Q). The students would need more practice and encouragement for the task to be of long term benefit for them though.

6.3. Closing note on *Synthesis* and *Application* phases

I realised that I was unable to achieve all that I had planned, therefore, the *synthesis* and *application* phases of the programme were reduced in time. The

learning skills of many of the students had improved but there were limits to their desire and ability to work independently. By amending my approach to conform with student learning needs, I believed I had maximised the benefits of the programme for them and I was clearer about how the programme might be modified further for a second implementation.

As a researcher, I acknowledged that each context was unique and success was an outcome of having a practical knowledge about contexts, programme and students and applying this knowledge accordingly. The differences in contexts are discussed in detail later.

6.4. Results from Final Questionnaire (Q1b)

It was difficult for student responses to be consistent as absenteeism was high in both schools. Student numbers declined by attrition to approximately a third from 44 to 27 for the final questionnaire Q1b (Appendix G) and according to the DET in School A, "absenteeism is a phenomenon you come to expect from students of lower ability". Reasons for the decline in numbers from lesson to lesson included: job experience time off-campus, sickness, truancy, sports exchanges, requests by other school departments for students and expulsions in each school. In terms of responses, not all students answered each question, even when the questionnaire was returned to them with missing information highlighted.

The responses in this section relate only to those who had completed both questionnaires so that student responses could be compared between the beginning and the end of the programme. There were 12 responses from 18 students in School B and 17 responses from 26 students in School A. Some preliminary results concerning licensing matters were reported in Chapter Five and the balance is briefly summarised next with greater detail provided in Appendix R.

i. The percentage of students who agreed that "a licence was important" increased from 72 percent to 100 percent. The activities within the programme had assisted many students to alter their perspective from a licence not being important or sometimes important at the beginning of the programme.

ii. Forty percent of the students had altered their stance during the programme to acknowledge that there was a greater likelihood of being involved in a crash than they had estimated at the beginning of the programme. They realised crashes were not always the personal responsibility of someone like themselves being careful.

The programme had alerted many students to the possibility that *chance* or *misfortune* or *other people's stupidity* were additional elements to be considered in relation to safety.

iii. Most students maintained their earlier stance and rejected the notion that "it is OK to drink and drive if not carrying passengers". However some students continued to overlook the potential for a drinking driver to hit another innocent road user when stating that "It was OK to drink and drive if they're on their own" or "It was OK if not carrying passengers".

iv. Most students disagreed with the statement, "seatbelts are not that important to wear." One student, who qualified seatbelt wearing as, "always (important) in the front and sometimes in the back" was expressing a likely *misconception* held about the safety of not wearing seatbelts, which ran counter to global seat belt wearing statistics. This type of response remained a challenge to address further.

v. Over half the students were prepared to support some form of non-physical abuse or gesticulation of some kind "*if other drivers 'got in their way'*". There was a negligible shift in the direction of responses towards more or less abuse following the programme. It seemed that more work and resources were necessary before reductions in the propensity to use abuse could be reflected in student comments.

vi. Closely related to the issue of abuse was a lack of appreciation for courtesy in the traffic environment. Twenty-three out of thirty six responses agreed that "they sometimes felt good about being courteous to other drivers" and changes in perception at the end of the programme were minimal. Two comments from female students stated, "you don't drive to make friends, you drive to get somewhere" and "I don't agree that it makes me feel good when I am courteous to other drivers". Positive benefits of cultivating courtesy on the roads, described as "letting people in front and out of parks", were not appreciated by a number of students. It seemed for some that egocentric concerns for self continued to predominate over concerns for others.

vii. Eleven students out of seventeen in School A and all of the School B students were positive about the course. Three students in each school had passed their learner licence test from work done in the programme. Benefits that students mentioned included "learning about how others think and how to treat other drivers on the road; common sense ideas all round better way of thinking; being

more aware of dangers of driving; and learning that there was more to driving than changing gears".

In summary, most students had developed an awareness of the serious impact and danger of crashes. They had also developed an awareness of others, of driving, of safety precautions, and factors contributing to crashes. Somewhat surprisingly, some acknowledged gaining confidence in their approaches to driving from the programme.

6.5. Results from Feedback Questionnaire Q1c

I could not locate many references in research reports to what students thought about DE programmes. This prompted me to design a feedback questionnaire to explore their perspectives about the programme. Appropriate statements could contribute to the triangulation process for reviewing my own practice and improving the effectiveness of teaching and learning for the next implementation. The results from the student feedback questionnaire Q1c are collated from both schools in the summary to follow while a more detailed analysis is given in Appendix S.

i. Most students enjoyed video excerpts because "they were informative".
ii. Real life stories connected with *reality activation* exercises had impact because "the stories were real; were emotional; and had more meaning than just facts".
iii. The visits from special guests were memorable for students as "they demonstrated what survivors went through".
iv. Only four students felt that the *driving simulation exercise*, designed to assist students with learning the *Road Code* was "a waste of time; boring". Others found it interesting "but nothing beats the real thing".
v. The experienced driver survey was mostly regarded as helpful because students acknowledged that "more experienced people can often drive well".
vi. Some students did not understand aspects of the *3DMDT*, which presented traffic safety factors in a concrete form but others thought "it was interesting being able to visualise the whole DE programme on a three dimensional model".
vii. All except for two students found the programme positive and helpful.
viii. Students highlighted the full range of activities as "enjoyable".
ix. The least enjoyable aspects centred on "writing" (four), the "haiku exercise" (in School A; two), "teacher talk" (in School A; two), and a number criticised "videos", "the driving simulation exercise not being completed" (three) and "too much of an emphasis on safety".

6.5.1. Summary of Second Cycle of AR

There was a lot to digest in the comments from students. I noted that much of the enjoyment had occurred as a result of *reality activation* exercises relating to real incidents of road trauma. I have summarised my thoughts in Figure 6.2 in keeping with reflection in the AR cycle following completion of the first implementation. Issues are described in greater detail following the summary.

SUMMARY OF POSITION AFTER IMPLEMENTATION ONE: AR CYCLE TWO
The Teacher's Position: Changes were made in the programme. My assessment of student needs helped me to review my teaching style, resources, activities and programme structure. I focussed more on formative assessments of student learning.
The Students' Position: Students showed an improvement in their attitude and a greater enthusiasm for the course. Their feedback, concerning activities and the values the course had for them was mainly positive. They preferred group work and by realigning programme goals, levels of cooperation increased and behaviour problems fell.
Knowledge, skills and attitudes necessary for adolescents to be safe on the road: Most students could show some assimilation of ideas associated with a decrease in risk-taking and increased levels of safety. More needed to be done for students to appreciate how to minimise abuse and to understand the importance of courtesy in the driving task.
Important features of being an adolescent that needed to be considered in a DE programme: Having acknowledged the learning needs of transition students, I felt it was important to find ways of building self-confidence to counteract the belief many had of 'being dummies'. Understanding their classroom cultures was integral to achieving this. It allowed me to establish boundaries and expectations for learning, to assist them further.
Teaching methods and associated learning theories that could assist in the development of a DE programme: The teaching methods described earlier were still appropriate. I considered a *constructivist* approach to learning that acknowledged more how students constructed meaning and could provide a rationale from which I could develop new activities. In School B, students were more amenable and able to be involved collaboratively.
Teacher attributes that were important for the delivery of DE in the classroom: Undertaking personal self-review allowed me to recognise the effects teacher style and strategies had had on student learning. I adjusted tasks and tried out new ideas, which showed positive outcomes in terms of student learning and classroom behaviour.
Factors that contributed to the effectiveness of the programme: A review of course objectives meant that student and teacher goals were more closely aligned. Once my approach as a teacher and activities were adjusted, the learning environment improved. Less forward progress was accomplished but student satisfaction improved.
Effective elements of the programme: Having a wide range of activities was effective for students. Reality activations involving special guests, real life stories, experienced driver surveys and use of video excerpts were all mentioned. In practical terms, model construction, simulation development, and activities focussing on concrete-operational constructs were helpful for students to better appreciate crash causes and their effects.
Changes to the programme in light of the second cycle: Exercises in driver licence revision acknowledged the high level of motivation students had to obtain a learner licence which six students achieved. I needed to develop a course text next, introduce the model of the driving task more systematically and eliminate some activities for efficiency.
Teaching & Learning Development: My pedagogical knowledge helped me to adjust tasks for student ability levels more and helped me to counteract barriers to learning for students, which were a constant challenge for me.
Research / researcher issues: the results of the questionnaires and the feedback from students had affirmed for me areas that were going well and had alerted me to those that might need to be culled or modified. Further consultation with educational theory and literature could help me with such decision-making.

Figure 6. 2 Summary of position after Implementation 1: AR cycle two

6.6. Research Questions

In this next section I use the research questions as a framework for analysis and discussion of the first implementation.

Research Question One: What knowledge, skills and attitudes were necessary for adolescents to be safe on the road?

Two concerns could be highlighted to begin with. The first involved the closely aligned concepts of *abuse* and *courtesy* in the driving task and the second related to the *acceptance of risk.*

Courtesy was not mentioned in the *Road Code* at the time and was also seldom mentioned in traffic resources and campaigns. Some recognition was given to an equivalent concept, albeit obscurely, in the LTSA *Safety Directions, 1995/96 Planning Year* (LTSA, 1994c).

The LTSA recommended that there was "a need...to make the roading environment more friendly, by reducing the opportunities for conflict between these road users (children and older road users) and motor vehicles" (p. 32). Occasionally support for increased levels of courtesy came from letters to the editor (Yardley, 1996) but little seemed to be formalised to promote courtesy or prevent abuse. Half of the students replied that some form of abuse could be justified in certain circumstances, while in terms of courtesy, several students did not appreciate the advantage of letting people in and out of parks and side streets. More support for courtesy in DE and community programmes was needed. When considering questionnaire results against a backdrop of what was required to keep students safe, some students showed a greater preparedness to accept higher levels of risk instead of cultivating safety. More emphasis was required to explore *attitude* and the *acceptance of risk.* Recent evidence from both Midland Health (1996) and the LTSA (1997c) confirm that adolescents are more vulnerable to crashes than any other group of road users (Langley, Wagenaar, & Begg, 1996; Lonero & Clinton 1997). High levels of risk acceptance was sometimes influenced by external environmental factors. Some students reported that parents gave consent to their children to drive without a licence. Such attitudes, encouraged in this way, were likely to become seriously entrenched for the future (Owen, 1997) and would be more difficult to alter as a result. According to Fletcher, Hamilton and Hewitson (1997) "parents do influence their children's risk-taking" (p. 16). Archer (1990) draws parallels with parents who set a similar "example...[through] excessive alcoholic consumption" (p. 41). She acknowledged that some young adolescents, particularly "hoons" (colloquial – unruly youth who use cars dangerously) seem to be "unready to learn before disaster strikes" (p. 44). Furthermore, the "hoons" tended to "treat their cars as toys rather than [regarding them] as potential killers" (p. 46) when

accompanied with behaviour ranging from overcrowding, dangerous driving and drink-driving. I explore matters of risk acceptance further in the next section on theory and literature.

The challenge for me was to continue to provide evidence that safer options provided greater benefits for all.

Research Question Two: What features of being an adolescent need to be considered in a DE programme?

The principal *features exhibited by adolescents that were important for the programme* centred on:

- A general lack of confidence in reading and written work skills, and difficulties dealing with abstract concepts.
- Work habits related to these characteristics that resulted in early capitulation from activities and low volumes of completed or follow-up work.
- High rates of absenteeism in both classes, which contributed to slower rates of progress.
- A reliance or dependency on the teacher for affirmation or assistance.

The culture of each class was different, due to the abilities of students and the cultural mixes in each school (ethnic, peer, socioeconomic). I did not set out to make a distinction between contexts, however, because the differences were quite marked, I could not ignore them. To begin with, my teacher-student relationship was different in each school. In School A, I was a guest DET while the current DET became an observer. It was difficult for some students to accept me as the DET in the regular DET's class. Resistance was more noticeable and subtly expressed by students in that class. In School B, my role was more closely aligned with being a relief DET and once I had established my expectations of work and behaviour, I could proceed with the programme with little negative resistance.

Although both classes were transition students, there were other differences. I noticed students in School A:

- Exhibited a high level of social interest in each other with periods of distracting gossip occurring during class time that essentially defined subgroups within the class;
- Showed greater levels of resistance to tasks and activities;
- Were more reliant on me for assistance;
- Were not accustomed to doing homework for the next day;
- Favoured working in groups but were less cohesive as a whole class; and
- Found difficulty understanding abstract concepts and working in open learning situations.

By comparison, the students in School B:

- Showed much less off task behaviour and fewer instances of students exhibiting behaviours for others;
- Were more accepting of students who were diligent and showed independent working skills;
- Were more conscientious in their approach to tasks;
- Were more likely to have prepared and presented follow-up work in class and often achieved more within a shorter time;
- Were more likely to work independently, and would persevere with open learning situations; and
- Were more enthusiastic about working in a collaborative way in the latter half of the programme.

I found a consistency and strength in each group culture (Handy, 1988; Jelinek, Smircich & Hirsch, 1983; Sergiovanni & Corbally, 1984) and these had a unique influence on what I could do and how I could work with students. At the halfway stage I became aware that I needed to consider "culture and the organisation together" (Jelinek, Smircich & Hirsch, 1983, p. 331) and in each classroom, I began to adapt the programme to meet their needs more satisfactorily. Abbs (1987) remarked that "pupils in low streams or bands feel a sense of failure, have a poor self image and are not well motivated" (p. 77). Cloke (1987) noted that when conducting profiles of students in his school that:

> The first significant factor to emerge...was the poor reading ability of some 79 percent of the pupils listed, although intelligence scores...suggested that many of them had average or above average intelligence. This perhaps suggested that pupils with learning difficulties were not predominantly those of low intelligence, as was often assumed (p. 142).

To counteract the learning difficulties students exhibited in School A, I created more opportunities for group work and I changed the way I worked with students. Cloke (1987) similarly reiterates such ideas when suggesting a fundamental shift in role emphasis for the teacher.

> We must be free to circulate from group to group listening and participating, not with any authority derived from status, but with authority derived from being a mature and fluent user of language in the room...(creating) an environment which held a more equal balance between talking and writing as well as greater opportunities for pupils to listen to each other talking, not only to the teacher (p. 140).

The less formal relationship that I adopted with students in the second half of the programme enabled me to develop a more collaborative approach in School B. In

School A, students were less likely to work collaboratively with me but their interpersonal relationships with me improved. They were more at ease and showed greater confidence during the second half of the programme, even if this was under some duress on one occasion when I withdrew my support for go-karting. Following research into patterns of behaviour shown by students, Revans (1991) remarked that "there was a significant correlation between the child's attitude to authority and the friendliness of the teachers...when the students are encouraged by friendly teachers to ask questions (however stupid) they like school, and it affects their whole attitude to authority" (p. 22). It was important for me to continue to cultivate these positive teacher-student relationships.

In each school absenteeism operated at a high level. This was noticeable in classes at different times during the week, in particular, near the end of each day, on a Wednesday last period in School A, on a Friday last period in School B, and towards the end of the week. Unfortunately many were absent on occasions when special guests were invited. Absenteeism created several difficulties for students and for me; there was loss of continuity in programme, a need for recapitulation, disruption of routines, and it created problems for understanding new ideas. These factors all contributed towards a slower rate of progress and of task completion. This could often be contrasted by DE periods at the beginning of the week and early on in the day when attendance was usually better and students were fresher and able to concentrate more.

I tried to schedule activities that were more enjoyable practical projects and visits out of school at times when patterns of low attendance had occurred to encourage greater attendance. Although absenteeism was a barrier to learning, improvements in my interpersonal relations with students made learning more enjoyable for both parties.

Research Question Three: What learning theories and associated teaching methods could assist in the development and implementation of a DE programme?

The *range of learning theories and teaching methods*, noted in the first summary (in Chapter Five), was still appropriate. From a *constructivist* learning perspective, it often took several repetitions, using different teaching methods, before some students were confident about knowing what to do, whereas some might not understand even after that. To this end I continued to use a range of strategies and

found that changes in student perceptions had occurred in some way. Positive learning occurred when I:

- established routines to develop and use new vocabulary.
- simplified tasks and planned more group activities;
- employed a range of visual, kinaesthetic, aural, affective and verbal learning modes catering for different learning styles.
- modelled activities, developed tasks and provided exemplars where necessary to assist students to develop confidence and expand their cognitive appreciation of abstract concepts using concrete-relational models.

Transition students had more difficulties with learning and the secondary school system seemed to be less geared toward meeting their learning needs. Cloke (1987) observed that "the transition from a primary school, modelled on independent learning, to a secondary school with a teacher-dominated, subject-centred approach...[could be] sudden and traumatic one for the able boy who could cope; for the boy with learning difficulties it was often disastrous" (p. 142). Although a primary education system might offer more independent learning opportunities to lower achieving students, there was more emphasis placed on nurturing a student at the level they were at by a home-room teacher. The secondary system was more geared to the use of specialist teachers imparting knowledge to students who circulated from classroom to classroom about the campus. There was little contact with a home-room teacher and their function in secondary schools was more administrative than pedagogical.

Feedback that I received from students about the strategies I adopted in the second half of the programme, showed increased confidence and self-esteem; they could describe concepts and ideas more comprehensively using compound sentences that showed cause and effect. The *3DMDT* enabled students to gain an appreciation of abstract concepts and several students acknowledged that the three dimensional model showed that there was a lot more to driving than they had realised.

Research Question Four: What teacher attributes were important for the delivery of DE in the classroom?

The ability to be critically self-reflective and to review strategies and ideas when events required an alternative approach remained important for the delivery of a DE programme. Inherent within these skills was a need for secure pedagogical knowledge and experience, which was used when planning improvements. Reviewing my approach and practice at the halfway stage had resulted in my acknowledging that some student needs had been overlooked. As a part of my self-critique, I consulted

literature that helped me adjust to a more student-centred approach to learning. Subtle changes were made to the way activities were undertaken in both contexts. Improvements were not due to a change in curriculum content so much as the way I rethought and had repackaged the activities for students and nurtured students at their level. According to Thomas (1987),

> successful teachers use sophisticated management strategies in efficiently running their classrooms. Many of these strategies seem to rely for their success on the maintenance of flow, the existence of which in turn appears to rely on the teacher simultaneously occupying several positions in the classroom. Kounin (1970) identified, for instance, elements such as *withitness* - the ability to attend to disruption whilst still teaching - as being vital to the effective management of a classroom. He felt that such management strategies were more important than a teacher's particular teaching method or what he called his or her *desist* technique (p. 229).

I had used a number of management techniques in the second half of the course:

- I forestalled events or activities, like the introduction of a resource, if the anticipated value was likely to be lost.
- I made changes immediately when I felt that students would not gain the total benefit from the lessons as I had done with the visit of two special guests.
- I had to admit defeat at times and to try another approach when I recognised that some situations, even though they appeared similar to a previous occasion, ended up being different.
- I focussed more on what students could do as a basis for what they might do next.
- I also had to exert pressure on students to achieve a higher level of work than they aspired to.

Nurturing the learner seemed to be more critical for transition students as they were more dependent on teacher support than more able students. I had greater success in encouraging them to achieve by maintaining a close, friendly and more informal relationship with them. Coercion had worked but some students reacted against this.

Research Question Five: What factors influence the effectiveness of a DE programme?

The feedback from students and the results from pre and post-implementation questionnaires confirmed that the *TAKE FIVE* DE programme was *effective* for most students. A number of factors led to this improvement in the second half. I continue using the OECD (1986) criteria as a guide for effectiveness and briefly note the main points:

i **Validity of educational (teaching) objectives**

The educational objectives from a teaching perspective remained valid for the students. I expanded adult and community involvement by inviting experienced drivers and other guests to contribute their knowledge to the students. However, some students remained unconvinced of the importance of some objectives for increasing levels of their personal safety.

ii **Relevance of educational objectives**

I negotiated some aspects of the programme with students to include driver licence revision. Most students in School A approached the programme with renewed enthusiasm. The *3DMDT* provided a popular way of summarising all of the contingencies that could occur when driving and introduced students to a global perspective of how traffic problems and safety strategies evolved from everyday driving tasks.

iii **Content, and structure of instruction**

The content remained virtually intact. The lack of prepared exemplars for student guidance limited the potential for the application phase to be realised fully and for a creative arts-mediation exercise to be explored.

iv **Instructional process**

Students demonstrated more confidence in verbal abilities and conceptual awareness once I had adjusted my personal expectations of the students and provided them with more concrete-operational learning opportunities. Students demonstrated improved levels of understanding and written expression, clearer insights into cause and effect, and a gradual understanding of the global perspective of traffic matters with a higher levels of visual support and the establishment of learning routines. Students worked more at their own pace and in School B they were more self-motivated to pursue creative ideas.

v **Acceptability of a programme for teachers and students**

Some student peers and teachers regarded DE as having lower status by virtue of its placement in transition education classes and it appeared likely that the importance of a DE programme was undervalued wherever these perceptions were found. A prerequisite for transition students to assimilate DE knowledge, skills and attitudes was supportive assistance within the process of learning. Therefore, the elimination of learning situations and teaching strategies that acted as barriers to student involvement encouraged more students to learn from the DE content.

Activities in the second half of the programme had not only contributed to changing student perceptions about vulnerability and the value of a driving licence but they had also contributed to developing greater student confidence and competence for learning. Relevance and vitality were enhanced by having the *TAKE FIVE* programme "centred on the place where the learner and the teacher meet...[and the] ultimate success will depend not only on the quality of the leadership within the school but on the teachers working within it" (Cloke, 1987 p. 144).

6.7. Theory and Literature

Little pedagogical guidance existed about adolescent learning behaviours in research into DE programmes. Details relating to the implementation process had largely been ignored as well; in particular the calibre of students in a class, what they could accomplish, how they might learn best and to what extent they could or would be prepared to make changes in their perceptions of risk taking and safety.

I realised, prior to the second phase of the programme, that "when a teacher's prime focus is elsewhere than on the learner and the learning...children are likely to become more acted upon than acting" (Boomer, 1982, p. x). Throughout the first phase, I had discovered the need to acknowledge "actual behaviour of adolescents, as opposed to making inferences (about behaviour) based on adult perceptions" (Tonkin, Cox, Blackman & Sheps, 1988, p. 28).

I also realised during the first three weeks that students had had little input into what I had expected them to learn. I had effectively presented a traditional model of teaching and learning in which "the decision-making input of the teacher (was) high while that of the student was low" (Boomer, 1982, p. 5). While this style of teaching suited many of the students (who were dependent on the teacher) I was also forced, by realising the lack of progress students were making and their classroom behaviours, to *negotiate* a more relevant and appropriate curriculum for them. I had to acknowledge the learning characteristics they displayed and what stage they were at in their learning.

From my experience of teaching them during the second and subsequent phases I appreciated more that,

> the things that teachers and pupils try to achieve in their classroom teaching and learning, the ways they try to achieve these things and the problems they encounter offer very fruitful starting points for generating hypotheses about effective classroom teaching (Cooper & McIntyre, 1996, p. 3).

I felt better able to "theorise incisively about the limitations of classroom practice...[and] plan intelligently for the development of classroom practice" (Cooper & McIntyre, 1996, p. 3). In terms of curriculum development and accountability, I could better "explain and justify the learning experiences" (Eggleston, 1980, p. 2) I had provided. Therefore, my primary focus became student learning:

> teacher preference and teacher style (should) be drawn from what is best for students in their learning... teaching method, consistent with a learning theory, should arise from consideration of where learners are in their learning, not from subject habits or teachers preferences... the impetus should be the learner in the school - not the teacher in the classroom (Cook,1992, p. 223).

As a consequence of the implementation so far, the alterations I had made, during the second half of the programme, had reduced student dissatisfaction. The programme had developed more in line with the principles of interactive teaching. I had been able to maintain "good interpersonal relationships...[by showing increased] sensitivity to feedback from the learner...[and had developed] a focus on understanding rather than skill acquisition" (Collis & Lacey, 1996, p. 13).

I needed to review other ways to present information that might influence the students who were still reluctant to adopt and assimilate strategies that were safe for them as I prepared for the next implementation. I was concerned about students who continued to advocate risk-taking in relation to the wearing of seatbelts, of driving after drinking and who supported forms of abuse to drivers they might encounter. Tonkin, et al. (1988) note that "next to the first year of life, adolescence is the most hazardous time in the paediatric years" (p. 27). When looking at risk-taking, they alluded in particular to conceptual models of risk-taking by Jessor (1983, 1985) and Wilde (1988).

Jessor's (1983) research established the *covariation of various problem behaviours*: smoking, problem drinking, illicit drug use, precocious sexuality, delinquency and risky driving. Jessor argued that this covariation constituted a syndrome of adolescent problem behaviour. As an outcome from this, Jessor suggested that,

> the psychosocial functions of risky adolescent behaviour include: signalling commonality with a peer group; affirming independence from parents/adults; establishing a sense of personal identity; marking the transition to a more mature status; and just having fun (Tonkin, et al., 1988, p. 30).

The theory of *risk homeostasis* (RHT) (Wilde, 1988; 1994), is described as a basic "economic utility function that balances the risks and benefits of choosing safe or unsafe behaviour" (in Lonero et al., 1994, p. 75). It recognises that an adaptive process comes into play when safety benefits, created often by technological advances in some form, are likely to be counteracted by an increase in a person's level of *risk acceptance*. From advances in braking technology, for instance, drivers have learned to drive faster, relying more on their improved braking systems than they might have done previously. Identified more recently as the phenomenon of "late braking pattern" (Driver/Education, 1997, p. 9), once established and reinforced by continual practice, this pattern of driving behaviour becomes "overdetermined" or reinforced by additional factors (such as habit, absence of feedback), making the problem behaviour even harder to correct. The removal of one reinforcing factor is insufficient to change the overall driving behaviour (p. 9). In simple terms, it was possible that an awareness of RHT, which provides an explanation about why safety measures are less effective as they should be, could lead to improved levels of safety.

As far as this DE programme was concerned, higher levels of risk acceptance could be seen in some of the student verbal responses where they sought to establish a personal identity through group support, independence from adults and wanted to find out things for themselves. Higher risk acceptance could be linked to a constructivist notion of *viability*, where risky practices were retained as *misconceptions* of safety. Until such time as these practices could be portrayed in ways that showed their viability was flawed, adolescents would continue to retain the practices as misconceptions of safety.

6.8. Closing Note: Changes for the Next Implementation

Specific changes that I proposed for the next implementation were to:

1. Cultivate the role of being a facilitator more and reduce the level of direct instruction given;
2. Extend routine skill building exercises to daily crash analysis so that a profile of crash factors could be constructed;
3. Provide students with options to work individually or in groups;
4. Develop a DE text that would confine the programme and extend students' levels of thinking using open and closed questions and problem-solving exercises;
5. Include within the text, graphs, statistics, and crash-related pictures to expand the range of learning materials offered;
6. Introduce the three dimensional model of the driving task sequentially during the programme rather than at the end; and

7. Replace off-campus trips with more visits from members of the community, video excerpts and visual support materials.

I was keen to have students recognise that:

- courtesy could be a positive element in the traffic environment, and
- adolescent passengers were more vulnerable than adolescent drivers,

I would retain:

- *reality activation* activities; visits from survivors of road trauma and experienced drivers to share their knowledge, experience and expertise.

The first implementation provided me with rich sets of data about student characteristics, learning capabilities, and through first hand experience I had discovered what functions I needed to fulfil to better meet the safety needs of students. Having reflected on these matters, I then had to prepare and coordinate additional resources for a programme text, which I would use as the basis for the second implementation reported in the next chapter.

Chapter 7: Second Implementation

7.1. Introduction

I continue the narrative in this chapter, by focussing on the second implementation of the *TAKE FIVE* DE programme in the same two schools with two different groups of students between July and September 1997. This is the third and final major cycle of AR, following on from the two previous cycles reported in Chapters Five and Six. I outline contextual factors, the actions taken and the observations I made. I review the programme activities once again using small self-contained AR cycles, which are identified sequentially using capital letters in the order they were presented (see Figure 7.1).

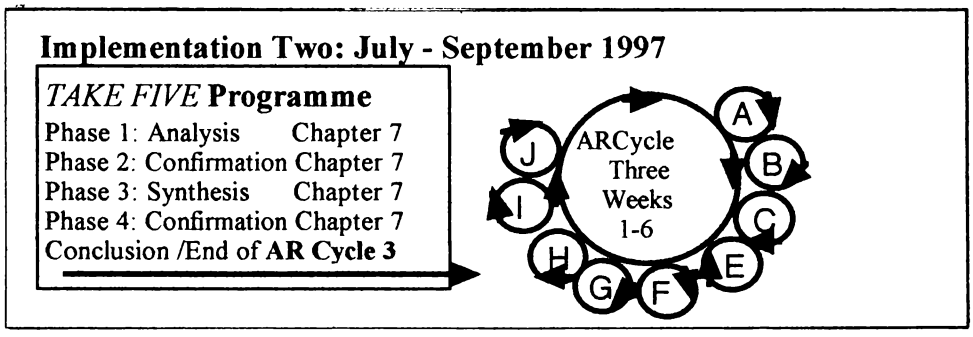


Figure 7. 1 Implementation Two: Small AR cycles and AR cycle 3

I then compare student responses between baseline and post-implementation questionnaires (Q2a, Q2b & Q2c) and report on a post-implementation application exercise (Q2d) given to students in School A only. I conclude by reflecting on the implementation as a whole using the research questions as a structure for reporting.

I had made several modifications to the initial programme to fine-tune the delivery process and improve its effectiveness for students. I eliminated some activities that had not had a noticeable impact on students and had prepared a programme text *Pre-Driver Ed (PDE Text)* which drew on successful activities from the first implementation and relevant traffic information that became the basis for the second implementation.

7.1.1. Students

The students in this implementation were distributed proportionally 28:10 between the two schools; School A (coeducational) and School B (single sex boys' school).

The age range in School A, was 15-16 years (years 11 and 12) and most of the DE students in School B were a year or so older, between 16-18 years (years 12 and 13). The gender ratio in School A was 17:11 males/females. Fourteen School A students held no licence, twelve held a learner licence and two had restricted licences. No student held a full licence. In School B, three had no licence, five had restricted licences and two had their full licences.

The students in School A were a similar group of transition students to the previous year with two having been promoted from a special needs class and a recent Asian immigrant, with little command of English. The School B students were a smaller class of twelve transition students who were a year older, were more physically mature, receptive and attentive from the outset.

7.1.2. Contexts

Different classrooms were used for DE in both schools for this implementation and instead of high tables or desks arranged in blocks of between four and six, each classroom had a traditional layout of desks; three double rows of desks facing a whiteboard at the front of the classroom. In School A, the upstairs classroom was well set up with a permanent video screen facing the class and ample storage in cupboards for resources. In School B, the external prefabricated classroom was more austere with a desk layout identical to School A, but there was no video system available unless prior arrangements had been made.

I had fewer problems teaching during a three-week block in School A in 1996 when the DE class was relocated to a room that had a traditional desk layout. I found that it was harder for transition students to concentrate and maintain an on-task focus when they sat facing each other in friendship groups around tables or groups of desks. A traditional, paired-desk layout enabled students to sit with friends but the forward-facing focus reduced distraction for them.

7.2. Second Implementation

The rest of this chapter covers my reflection on the previous implementation as a basis for planning the second implementation.

There were new constraints in 1997 that required me to make further adjustments. The class contact time was reduced from ten weeks (40 hours) to seven weeks (29 hours) in School A, and in School B, the time was limited to two visits each week for seven weeks (14 hours) instead of 40 hours for the previous year. The DETs in each

school needed time to include Driving Unit Standards (a new national qualification) in their DE courses.

I extended the three-point Likert-type scale in the questionnaires to a five-point scale in 1997 at the suggestion of my supervisors. Data were again collected from course activities, students' classroom diaries, my observations, a personal diary, an experienced driver survey and three questionnaires. Results were to be analysed according to the procedures outlined in Chapter Four. General patterns in student responses on a safety-risk continuum would be triangulated with other data (researcher observations, researcher diary entries and student diary entries), personal reflection (using the teaching-learning checklist), and data collected over the duration.

7.2.1. Improvements

I planned a number of changes to the programme, which were mentioned at the end of the Chapter Six. They principally concerned ways in which classroom-based DE activities and resources, and my presentation of them, could be organised to match the learning characteristics of students.

1) The activities: I planned to remain on campus, to establish a daily routine of crash analyses, to invite experienced drivers to be interviewed and construct a three dimensional model of the driving task (*3DMDT*). I would sequentially add components as I delivered the programme each session. In addition, I located other people, in line with social learning theory (Bandura, 1977) to help DE students appreciate the advantages of keeping safe. Students in the first intervention indicated that interviews with survivors of road trauma were memorable events for them, however Kate and her mother were not available in 1997, having found the experience somewhat cathartic but quite daunting. They now wanted to concentrate on getting on with their lives rather than being constantly reminded of the negative aspects of their tragedy. I eventually made contact with two 19 year-old university students who had been knocked over the previous year by the driver of a van as they stood on a median strip in the city one evening. The van was unwarranted because of a temporary windscreen and the driver who had been drinking could not see the girls clearly enough before he had run them over. Although not expected to live, the girls made a slow and remarkable recovery and eventually accepted my invitation to visit each class in this intervention. Most students reacted to the horror of the event and some

reflected on events of their own that had been as risky. In keeping with social learning theory, many students acknowledged that experienced drivers were positive role models. Following interviews with them, most students conveyed that their broader experience, their driving history and personal knowledge of human error were helpful to know about. Experienced drivers could reinforce good advice such as "take your time", or "do not be in such a hurry", or "let others in more" that can be easily overlooked.

2) My presentation: I developed a checklist for teaching and learning, (see Appendix K) to help me improve the effectiveness of learning for students as I made formative and summative assessments of teaching and learning. In the absence of a critical colleague, the checklist helped me to make improvements to my professional practice as I could critique both the progress of the intervention and the process of researching as a teacher. In this checklist I separated programme, teaching and learning elements, into three constituent parts; teacher, learner and programme. While a more detailed discussion of this checklist is left for the next chapter, my development of it during the previous implementation gave me an increased awareness of the learning needs of DE students. As a consequence, I could reconsider my role as teacher and work towards building up student confidence, reducing their dependence on me as the teacher, tailoring activities more towards concrete situations and giving them opportunities to work individually or in groups.

3) The resources: I planned the *PDE Text* (see sample texts in Appendices T & U) to give a clear structure to the programme and give students a clearer sense of direction. I designed it to assist transition students, who had high rates of absenteeism, maintain some degree of connection with the sequence of lessons. Activities would extend students' abilities to think and apply existing or new knowledge through specific questions and problem-solving exercises. I tailored the text to meet student needs using my knowledge of activities that had been successful during the previous implementation. I extended the range of learning materials from those available in the previous year and included graphs, statistical tables, and crash-related images. These would assist students to develop an understanding of abstract concepts better. The text might also provide a springboard for students to become more independent in their search for answers to questions posed as part of the activities. Rather than provide

answers directly in the text, I wanted students to construct new meanings using the statistics, articles and reports provided within. Many students had previously relied on me for answers and had shown a lack of depth in thinking at the beginning of the programme. An important function of the text, therefore, was to provide opportunities for students to become more involved with *deep* rather than *surface* learning and *high* rather than *low order thinking* (Newmann, 1990).

4) The students: It was likely, as I had found in the previous year, that several students would display resistance to some of the content on offer to them and as a consequence would likely maintain perceptions of danger or risk that they had *constructed* as *viable* but would largely remain as *misconceptions*. These students had provided the greatest challenge for me. They included students who were not convinced that *courtesy* was a positive element in the traffic environment, those who thought *abuse* in the traffic environment was sometimes acceptable and those who did not wear seatbelts consistently because they claimed that not wearing seatbelts did not always lead to serious injury. I needed to continue reinforcing safer practices and affirm personal worth and capabilities for these students in particular.

7.2.2. Procedure

I introduced myself to the students in each context outlining my interest in adolescent road safety. I invited them to help me to implement the programme further once the baseline questionnaire had been completed (see Appendix H, Invitation; Appendix J, Researcher Diary 1, July 21 & 22, 1997; Appendix J, Researcher Diary 2, July 29, 1997). I also explained to them that I needed their formal consent to meet ethical requirements for confidentiality and privacy. I cleared channels for counselling support through the DET for individuals should they emerge and I explained that my intention was to develop the most effective approach to DE for them as participants. I reassured them that they would not be disadvantaged from achieving other DE goals planned within their school programmes. The DET in School A, as in the previous year, attended most sessions while the DET in School B was not available.

The four-stage structure of the programme involving *analysis, confirmation, synthesis,* and *application* outlined in Chapter Three (see Appendices D, E, & F) was continued. I began by reading and modelling the first crash report as part of the *analysis* phase. I established two daily routines of *new vocabulary acquisition*, to be

recorded in the middle of their diaries, and *crash analyses*, to be recorded in the back of their diaries. The first vocabulary session included subject headings I had organised to become the basis for analysing crashes; crash factors, age, gender, responsibilities, cumulative statistics for July - August, and patterns or ideas for discussion.

For this implementation, I also created overhead transparency masters to provide a summary checklist of topics within lessons to highlight abstract elements like *crash factors* and *driver responsibilities* that would appear on the *3DMDT*. At the outset I also invited students to give reasons for the programme slogan "*TAKE FIVE - STAY ALIVE*".

7.3. Analysis phase (I)

In the *analysis* phase, the first phase of the programme, I introduced students to the reality of road trauma in New Zealand. It was important for students to *discover* patterns of crashes on our roads for themselves. The programme would operate differently in each class because of different class sizes, numbers of lessons, and the ability range of students. All activities continue to be reported alphabetically using capital letters (A, B, C, etc.) as small AR exercises within one larger AR cycle.

A. Crash analysis activity

Activity: This was a new classroom-based activity established as a daily routine.

Intended purposes / rationale:

For the students:
- to introduce them to factors contributing to road trauma;
- to develop their skills of analysis;
- to broaden their knowledge of factors contributing to crashes.

For the teacher:
- to introduce analysis skills and develop student knowledge of factors contributing to road trauma;
- to introduce *reality activation* to students in each class.

For the researcher:
- to ascertain what learning outcomes emerged from regular crash analysis;
- to monitor the *reality activation* activity for effectiveness.

Procedure followed: At the beginning of each day, I gave students a crash report from a local newspaper or from the *PDE Text* to analyse. Students then listed contributing factors under headings given and would explore reasons for the crash and any information that was missing; 'why did the car leave the road?' (see Appendix I, Sample responses from students 1a : Crash analysis exercise; Appendix J, Researcher Diary 1[RD 1], July 22 & 23, 1997; Appendix J, RD 2, July 31, 1997).

Observations / data:

- Some students in School A were very slow to make connections with factors; eight people did not understand the term *factor*, most students had little idea of the true impact of statistics and the meaning behind the figures, and most students had failed to realise the severity of reports like the one in the *PDE Text* in which a teenage driver had been responsible for killing not only himself, but two teenage brothers and had injured a friend.
- With fewer lessons available for the implementation, this structured exercise assisted students to develop confidence in analysing crash reports and provided the foundation for reality activation exercises.
- Regular practice at analysis and the process of activating reality heightened the serious nature of road trauma for students.

Explanations / Interpretations:

i. Early responses showed that a number of School A students were unfamiliar with abstract concepts such as crash factors and the process of analysing data contributing to crashes. Few mentioned the importance of human factors in discussion and overlooked the true impact of road trauma; vital information, such as gender, age, personal cost, lost opportunities, had not registered with them at first. It seemed that regular exercises introducing new vocabulary helped students to increase knowledge and develop skills to comprehend data provided in reports.

ii. The process of analysis for students was simplified by having specific headings under which crash data were listed. In particular, the categories highlighted what factors could be involved, exposed missing information from reports, gave clearer guidelines to students about what was required of them, which seemed to reduce student stress and resistance to the task. A routine task with familiar headings appeared to assist students develop skills of analysis within a shorter time.

iii. The activity provided a mix of *closed* and *open* learning tasks. Crash analysis headings, introduced as the first vocabulary session, became a checklist for data required in each analysis (closed), while data that was missing gave students an opportunity to give interpretations about them (open), which assisted students to construct knowledge in ways they had not been capable of doing earlier. Students soon began to confirm patterns in crashes very quickly. From one crash involving two 19-year-old females who were killed when their car hit a pole, one student had observed "One was an *inexperienced* driver and the other an *innocent victim*" (RD: A, July 28, 1997).

iv. Students confirmed patterns in the data earlier than in the previous year from this daily analysis. Furthermore, by taking account of information that was not published in reports, they could appreciate better: that passenger deaths and injuries were largely ignored; that many innocent people were hurt and injured unnecessarily; that deaths and injuries were far more serious than mere numbers indicated; and that serious injuries could occur to anyone, irrespective of how careful they had been on the road, (see Appendix I, Sample responses from students 1b & 1c: Impact of crash analysis statistics).

Conclusions:

Crash analysis enabled vital information such as *who* or *what was at fault* and other possible contingencies to be reactivated and reconstructed. Increased student confidence and knowledge about safety were outcomes that heightened their understanding of consequences of crashes. Some students could recognise patterns in crash factors before we had reached the next *confirmation phase* of the programme. From a teacher and researcher perspective, it was a simple yet effective exercise with which to begin each day.

Modifications:

The activity was successful as it was.

B. Kevin's Sentence

Activity: This was the same activity as I had used in the previous year where I played an audio recording of an award-winning Canadian radio documentary for students to become acquainted with road trauma through the eyes of a teenager. Kevin had killed his two best friends after drinking alcohol then driving.

Intended purposes / rationale:

For the students:

- to imagine what it would be like to be Kevin (having killed his best friends) and to consider how they might feel in similar circumstances;

For the teacher:

- to introduce students to the consequences of crashes as a deterrent for future driver behaviour.

For the researcher:

- to confirm the impact of this story as a reality activation exercise.

Procedure followed: I wanted Kevin's documentary to speak for itself before I called for student responses, as occurred in the first implementation. Once the presentation had concluded, I asked students to write four sentences about the story, then as a *reality activation* exercise, to describe how you would feel as Kevin when:

- you were stopped at some lights ready for a bit of action,
- you came to your senses realising that you had just killed two of your friends.
- (see Appendix I, Sample responses from students 2: Kevin's Sentence; Appendix J: RD 2, August 5, 1997).

Observations / data:

- Most students could identify with Kevin as one excerpt shows:

  then we saw some primo chicks so I decided to follow them. My mate and I were still drinking quite a lot of alcohol. They were urging us to make a move, but I had a bit too much to drink and I could not keep control of the car and spun out and hit down two power poles then came to a stop by hitting a tree! (RD: A, July 31, 1997).

- Most students expressed a sense of remorse or regret:

  I would feel like a murderer, especially if I'm drunk; the guilt would grow and I would be so depressed; I would be angry with myself; I would hate myself; I wouldn't be able to cope (RD: A, July 31, 1997).

- Two students could not imagine being with Kevin explaining they could not pretend to be someone they were not.

  One explained "I feel nothing" (my interpretation "I'm not him so I don't know what he would be feeling") while the other tried to explain, "It's too difficult, I wouldn't have done that (therefore, I can't imagine what you are asking me to imagine)" (RD: A, July 31, 1997).

Explanations / Interpretations:

i. Kevin's sentence was a powerful lesson and, as I had found previously, most of the students were able to role-play Kevin without difficulty and in keeping with reality activation, conveyed sincere and personal thoughts. The activity broadened their understanding of consequences beyond what they had believed was possible.

ii. Two students found it difficult to imagine being Kevin even though I had explained that the purpose of the exercise was to explore behavioural patterns that could lead to dangerous activities. It was possible that they were prevented from imagining his perspective because they genuinely believed they would not have made the same choices or behaved in the way Kevin did. It was possible also that they appreciated the consequences but could not make the cognitive shift to assume the persona of someone whose behaviour patterns were contrary to theirs. Another reason could have been a change in the way reality activation exercises were introduced compared with the previous implementation. In the previous implementation, I had begun with activations of crash scenarios, which were now replaced by daily crash analyses without the personal activation of the stories. The lack of familiarity with personal activations of crash scenarios may have led to

reluctance for some to imagine they could "become Kevin" and "reflect what he might have done".

iii. In spite of different reaction to the task noted above, most students appreciated the negative consequences of Kevin's drinking and driving and his story.

Conclusions: This activity was again a powerful *reality activation* exercise helping students to appreciate the outcomes from killing two friends.

Modifications: It was possible that more practice in role-playing crash scenarios might have prepared students more fully for this exercise.

C. Sonya's and Susan's visit

Activity: This activity centred on the visit of two adolescent university students who had survived a serious crash as pedestrians. The driver of a van had contravened warrant of fitness and drink-driving regulations. This interview gave students a first-hand account of the personal experience of a serious road crash (see Appendix I, Sample responses from students 3a & 3b: Diary excerpts; Appendix J: RD 2, August 7, 1997; Appendix T).

Intended purposes / rationale:

For the students:
- to meet two survivors and learn first-hand about consequences of crashes, especially in regard to serious injuries and the prolonged process of convalescence and rehabilitation;
- to relate knowledge gained from crash analysis to a real case of road trauma;

For the teacher:
- to ensure that students appreciated the immediate and ongoing trauma that survivors have suffered and continue to suffer after injury;
- to encourage students to relate crash analysis knowledge to a real situation;

For the researcher:
- to assess how effective a first-hand account from two survivors can be for adolescents as a *reality activation* exercise.

Procedure followed: I introduced Sonya and Susan to the class as two survivors of a serious crash, and invited students to discover what had happened to them, and how they were affected, by preparing and asking questions. Both guests were asked to answer 'yes' or 'no' to begin with.

Observations / data:

- Students found the process of constructing knowledge from data gathered about the crash difficult;
- Students were not confident at working at an open-ended task;
- Students were horrified to learn of the full impact of the crash;

Their accident shouldn't have happened and now that it has, it is a life sentence for both of them especially Sonya. The driver who was drunk was only in jail and now has nothing wrong with him. This was a stupid accident.

- The students were astonished that the guests looked as well as they did after Sonya recounted her problems,

  "I got a broken fibula and tibula (which was the bottom of my leg broken), broken pelvis, fractured jaw, fractured skull, cracked wrist, pin in my leg, plate and 16 screws in my face and that's about it" (RD: A, August 5, 1997).

- Most students were amazed and horrified at the extent of the victims' unnecessary suffering.

  "I didn't really think it was this serious. They both looked fine until they told us what happened. I was really shocked. They must have gone through so much pain (RD: A, August 6, 1997).

Explanations / Interpretations:

i. In School A, the students found it really difficult to collate the information they had gathered in their crash analyses. I refrained from giving introductory information about the crash so that the students could build up a conceptual picture of it for themselves. This activity was different from crash analysis (a mainly closed activity), which relied on data collection according to prescribed headings. In this more open activity, the headings only gave clues as to what questions could be asked. The students found difficulty not only formulating the questions to ask but also processing the information being accumulated. I needed to repeat the question being asked several times, as well as the responses given by the visitors, before the students had fully understood what the responses meant in terms of who was involved, who caused what, how many vehicles were involved and how the visitors were affected directly.

ii. It seemed that students in School A, in particular, lacked cognitive abilities to ascertain what information was *not* there and should be asked. One or two students tentatively suggested things to me under their breath and I had to encourage them to offer their ideas to the visitors to consider. Part of students' reticence also appeared to be a lack of personal confidence to speak in front of peers.

iii. I eventually relented to requests by students to ask *proper* questions when the process of gathering information described above became too slow and pedantic. The guests at this stage were able to elaborate more about the serious nature of injuries, permanent disabilities, critical care, long term welfare, ongoing repairs

and operations to correct sight and hearing and what the psychological implications existed for them.

iv. This task contributed significantly to students' understanding of road trauma and the consequences of crashes through diary responses. It was easy for students to overlook the horror the visitors had experienced without accurate details; makeup, a necklace and clothing could hide a tracheotomy scar or broken limbs and dark glasses masked much of the visible evidence of scarring for Sonya until she removed them. It was a powerful reality activation exercise.

v. The impact of their visit, however, was lost for many students who were absent on the day of the visits. In School A, there were 11 students absent and in School B only three were present. They had missed the vital *activation process* and could not provide details about the devastation that occurred for them as can be seen in these summaries.

- Our visitors who came to our class were two 19-year-old females. A drunk driver hit them on Grey St in Hamilton East;
- Two people came to our class to talk about their crash. We found out that alcohol was involved. We found out that they got hit crossing the road.

Conclusions: Students showed a lack of confidence and ability to apply information collected from crash analyses to ascertain what information was still missing. Students found the *open activity* of framing questions difficult and needed more experience at such comprehension activities.

High levels of absenteeism hindered students from appreciating the valuable contribution the visitors made. The r*eality activation* exercise peaked when the visitors presented authentic insights into their trauma. Such visits were powerful DE experiences for students from a teaching and research perspective that were important to retain within a DE programme. Student responses expressed the deepest levels of empathy and horror for survivors of any activity in the programme. It was important, therefore, to continue to encourage students to construct information for themselves if they were to gain safety benefits from the visits.

Modifications: The modification I considered making was to make attendance at such a presentation compulsory for students, or schedule more than one interview per implementation to provide a greater chance for all students to attend at least one crash survivor interview session.

D. Effects of alcohol

Activity: The focus was to highlight effects of alcohol on adolescent behaviour.

Intended purposes / rationale:

For the students:
- to answer prepared questions relating to the documentary;
- to review the effects of alcohol on driving and social behaviour (see Appendix I, Sample responses from students 4: Two perspectives (Reality Activation).

For the teacher:
- to ensure effects of alcohol are discussed and fully understood by students and are related to the references in the *Road Code*;

For the researcher:
- to assess the effectiveness of another *PDE Text* exercise as a learning tool.

Procedure followed: The first exercise involved a reading of a transcript of an interview reported in a Radio New Zealand *Nine to Noon* programme on September 11, 1996 (see Appendix U). The interview involved an adolescent actor from Peter Brock's "*don't drink and drive*" advertisements who was caught driving after drinking alcohol. The DET and I modelled the transcript for the class; the DET took the role of the teenager and I became the interviewer. Once the principal theme had been discussed ("if the people who are delivering the [no drinking and driving] message can't absorb the message, how can anybody else?"), a recorded excerpt from a television documentary about *Teen Parties* was played for them about teenagers' alcohol consumption. Questions prepared in the text drew attention to problems, silly behaviours, the role of the Police and sought suggestions from the students themselves.

Observations / data:

- Students in School A concluded that:
  - a few unruly ones tend to spoil it for the many;
  - a person's behaviour was likely to change and could no longer be relied on whenever alcohol was introduced into the body (as a chemical agent); and
  - alcohol consumption followed by driving meant that a person's thinking would become less rational, more unreliable and potentially dangerous.

Explanations / Interpretations:

i. The students appreciated that the focus on alcohol was covered in unemotional and objective ways. The materials in written (spoken) and visual (video and cartoon) forms provided a variety of perspectives on alcohol and its consumption that reinforced the fickleness of introducing alcohol into dangerous activities like driving. The concluding statements, made collectively by each class, indicated that it was better to avoid alcoholic consumption when driving.

Conclusions: The use of multiple sources of information about alcohol helped students answer the prepared questions appropriately and a revision of alcohol consumption levels from the *Road Code* was relevant.

The variety of resources provided, from a teacher and researcher perspective, meant that the excerpts were relevant and effective for them.

Modifications: While the constraint of time precluded any further cover of the topic in School B, I was able to supplement one session in School A with a follow-up lesson using the ALAC resource *Alcohol Decisions and You* which added value to the lesson described above. I also considered incorporating role-play exercises using the resource *No Thanks I Am Driving* but insufficient time was available to pursue this activity further.

E. Vocabulary and problem solving

Activity: To provide new vocabulary to assist students with crash analysis, understanding DE content and understanding factors influencing traffic safety as described in Chapters Five and Six (see Appendix I, Sample responses from students 5a & 5b: Vocabulary exercises; Appendix J, RD 1, July 23, 1997)

Intended purposes / rationale:

For the students:
- to equip students with a basic foundation of DE terms;
- to increase students' breadth of DE knowledge of terms so that they could better contribute to discussions and offer opinions;

For the teacher:
- to facilitate deeper learning about cause and effect, antecedents and consequences and confidence for discussion;

For the researcher:
- to assist students to understand abstract ideas and to prepare them for making cognitive links with representations of these ideas on the 3DMDT to be constructed.

Procedure followed: As described in Chapter Six, I introduced terms systematically as they occurred in the programme. In this implementation, I began by introducing the headings I planned that students would use to analyse crashes. I then invited them to write definitions in the vocabulary section of their diaries and continue with other words featured in capitals within the *PDE Text*.

Observations / data:

- Students were more enthusiastic than the previous year, guessing spelling and meanings as my diary for August 7th conveys. The students:

liked to have things about which they could ponder...when I asked them about new words, with a view to introducing them into our vocabulary...they enjoyed it when I asked them, whether they knew a word that meant (...), beginning with (...) Each time I added a letter on the board, they would guess anew (RD: A, August 7, 1997).

- Students contributed ideas to interpret the meaning of *TAKE FIVE - STAY ALIVE* at any stage throughout the course; there was a greater preparedness to engage in discussion, less resistance and more acceptance of the tasks and activities than had occurred during the previous year.

I would like you to make intelligent guesses as to why you think I might have called the programme *TAKE FIVE - STAY ALIVE*. You can do this at any time during the programme. Whenever you think you have a reason that might be what I had in mind, just put it down (in your books) (see Appendix I, Sample responses from students 6: A Guessing Challenge).

A more mature or interested approach, compared to last year, conveyed to me that most (students) in School A were entering into the spirit of the activity. (RD: A, August 6, 1997).

- Students were noticeably more cooperative in the class according to other teachers in School A and students appeared to be further advanced in their ideas of safety than at a similar time in the previous year.

One student promptly said "I know its concentrate isn't it?" I was surprised as the only discussion about related issues that I could remember without specific emphasis was hearing students talking about distractions and the need to concentrate. (RD: A, August 7, 1997).

Explanations / Interpretations:

i. I acknowledged that these students appeared to respond more positively to opportunities that were *finite* and *closed*; students knew what was expected of them, with the *PDE Text* identifying words to be defined in capitals. They were more likely to complete work that had clear guidelines in class. It was possible that the *PDE Text* gave students greater confidence to discover new ideas and make suggestions.

ii. As a teacher, I was not as anxious as I had been the previous year as I felt that the text acknowledged what the students were capable of achieving which left me able to assist them more as a facilitator than a teacher.

iii. Most students could recognise that the course slogan *TAKE FIVE - STAY ALIVE* was both a challenge and an opportunity to make suggestions that did not have to be correct to be accepted. It was possible that creating opportunities for students to guess meanings and spellings of new vocabulary words each day within a secure and unthreatening environment had reduced the stigma of not getting attempts right.

Conclusions: New vocabulary gave students confidence to enter into discussion in School A where it had not occurred during the previous year. Students appeared to be now more in control of their learning processes and the anxiety for them to get things right all the time was reduced.

From the teacher and researcher perspective, the acquisition of vocabulary, coupled with a less formal approach to teaching and learning, helped to *increase the level of discussion* and provided support for them to *reach deeper levels of understanding* about cause and effect and abstract concepts.

Modifications: I could see no need for modification, however the lack of skills to apply information and gain new knowledge indicated a need for more practice.

7.4. Closing note about analysis activities

It seemed that three teaching strategies had contributed to a better course for the students. First I had acknowledged student ability levels were lower than higher achieving students, therefore, they needed more time and personal assistance to assimilate ideas. Second, more students were able to make connections with abstract ideas when I provided *closed type* guidelines and regular routines with visual support on the classroom whiteboard. Third, although it was easier, quieter and faster for teachers to have students copy information into their books, giving students a sense of *progress*, it did not help students when they needed to apply the information to other situations. It robbed them of the opportunity to develop "excitement and a confidence of knowing for themselves" (RD: A, August 7, 1997).

Reports from other teachers, who accompanied the School A class on occasions when the DET was away, confirmed that the students appeared more settled than they had experienced them before. It was possible that the *PDE Text* had provided a primary focus for student attention rather than me attempting to establish an equivalent focus using words as in the previous year. The *PDE Text* also allowed me to establish a more informal relationship with students and gave me more opportunities to circulate and assist them. Students were less apprehensive about learning as a result.

A physical education teacher who had taught the students and was observing one of my lessons, concurred with me that systematic strategies to empower students, like those alluded to above, were important. "If they (the transition students) didn't understand the implications behind some of the existing statistics for themselves...(we believed) they were likely to be the ones more likely to feature in them at sometime in

the future" RD: A, August 7, 1997). It was, therefore, more important for DE students to understand what statistics revealed through personal analysis rather than copying down DE content that made no sense to them at all.

7.5. Confirmation phase (II)

This second phase of the programme involved students learning to interpret the statistics from crash analyses they had completed and from tables and graphs in the *PDE Text.* Students began to make connections earlier than the previous year with DE related information prepared as the text. By week three students in School A had deducted from their analyses that:

- more males than females were involved.
- teenagers were the most vulnerable age group.
- high numbers of passengers were essentially innocent victims.

There were still students, like one from School A, who revealed an attribution bias when he criticised newspaper reporters of "only concentrating on youth in their reporting of crashes" (RD: A, July 30, 1997). What he could not realise, just two weeks into the course, was that statistics given in newspaper reports reflected global patterns of reality that were not subject to high levels of fluctuation nor subjective bias.

I used overhead transparency masters to provide a summary or overview of previous lessons and as an introduction for the next phase.

F. Three dimensional model of the driving task (3DMDT)

Activity: I introduced the 3DMDT in week four once students could understand the crash patterns more effectively.

Intended purposes / rationale:

For students:
- to gain an overview of the factors and links between them that had an influence on the driving task;

For the teacher:
- to present students with a comprehensive overview of both the factors mentioned above and the content of the DE programme;

For the researcher:
- to assess student comprehension and ability to apply human factors into a *Take Five Checklist of Traffic Safety* (*T5CTS*) (see Appendices C & O).

Procedure followed: I began to introduce the *3DMDT* (see Appendix O) in week four and focussed on *human*, *vehicle* and *environmental factors*. I explained that in a *passive* state a driver existed as in a state of rest where age, culture, and personal

characteristics were inherent but not active (see Appendix I, Sample responses from students 5a). The *active* state involved a person in perception, cognition, action and reaction to factors in the environment. I wanted students to identify factors influencing the driving task and how they could be managed. I then used an A5 sized picture of a VW car to introduce *vehicle factors* before adding a range of *environmental*, and *driver responsibility* factors, positioning them sequentially on the *3DMDT* model.

Observations / data:

- The model stimulated wide-ranging and high quality discussion. Student ideas influencing the *active driver* included "speed, alcohol, concentration, fatigue, attitude, personality, self-esteem, emotional wellbeing, self control..."

- Students were keen to demonstrate warrant of fitness knowledge.

  The boys appeared to be interested in the information being presented because it was topical, recent, relevant, and gave them a chance to show their particular knowledge (RD: B, August 26, 1997).

  Once I was satisfied that they had done sufficient independent work, I shared what I had prepared by OHT. As I uncovered the OHT you could hear, "yes I got that one...as they checked off their lists" (RD: A, August 27, 1997).

- The 3DMDT made the links between abstract ideas and concrete representations visible; students could review their existing knowledge, apply information gained through analyses, and could make guesses about the programme's slogan.

  Speed ("from the need to spend five minutes considering what to do");

  Concentration (which emerged by "noting distractions" appeared to be a common cause of crashes).

- The model allowed students to develop a deeper level of understanding.

  When questioning *'concentration'* more thoroughly... they suggested fatigue, distractions, the environment and knowledge as part of concentration (RD: B, August 26, 1997).

- The model informed students about concepts like *driver responsibilities* that they had not been aware about before.

  When *driver responsibilities* were explored further, the students discovered several responsibilities including insurance that they had not thought about before (RD: B, August 28, 1997).

Explanations / Interpretations:

i. I noted that, although School B students had had fewer lessons than School A students, they were more focussed on topics associated with the model and they could achieve more in a shorter time. Other factors were also likely to have contributed to faster progress; School B students were mostly a year older than the School A students being 6th and 7th formers (years 12 & 13); a small class (10)

made teaching more intimate, less formal, and contained fewer distractions; and the decile ranking of each school was different.

ii. It was likely that differences in socio-economic ranking, between School B (decile 7/10) students and School A (decile 4/10) students had some influence on student attentiveness, motivation and even ability levels but these ideas are discussed in greater detail in Chapter Eight.

iii. The confidence of building new knowledge through closed tasks (crash analysis) was a solid foundation for students to undertake tasks that were more open. If students were clear about the scope of an activity having experienced closed situations, they began to explore open situations with less trepidation than I had noted previously.

iv. Once crash factors had been identified and confirmed as human, environment or vehicle factors, the *3DMDT* helped students to build on existing knowledge and moved them sequentially on to guess the meaning of the slogan *TAKE FIVE - STAY ALIVE.* I could help provide clues to refine their guesses.

v. Students were interested and showed enthusiasm when activities were supplemented with pictures, overhead transparency summaries, and graphical figures. For example, a picture that provided a summary representation of non-human factors in the driving task assisted students to revise their knowledge of such factors.

vi. The *3DMDT* presented factors (concrete and abstract) involved in the driving task using a simple three-dimensional representation. Presenting such concepts in such form seemed to help students overcome cognitive difficulties associated with handling a number of abstract concepts that could interact in a variety of ways. Most students could understand all factors involved in the driving task and the model helped them appreciate a global perspective of the driving task as the lessons proceeded.

Conclusions: The *3DMDT* assisted students to comprehend abstract ideas by providing a visual presentation of elements and the links between them. Abstract concepts, such as driver responsibilities, which were not often summarised, even in the *Road Code,* were made visible. The sequential construction of the model was more helpful for students than a single presentation that I provided during the first year.

It was helpful, from a teaching and research perspective that each element for discussion could be located on the model. The model also provided a summary of the

DE programme content, which assisted students who had been absent or needed more personal help. It also provided a structure from which the *T5CTS*, as a safety strategy for adolescents in the driving task, was evolved.

Modifications: The model appeared to function more effectively in the second implementation. Supplementary support using over head transparencies and three-dimensional polystyrene symbols blue-tacked to the teaching whiteboard were further ways abstract ideas could be represented in concrete forms.

7.6. Synthesis phase (III)

I summarised each component of the course on overhead transparencies to establish links between factors. From these summary transparencies, I constructed polystyrene symbols and transferred them onto the *3DMDT* during the class time. The model represented a synthesis of factors that were critical for identifying danger and promoting safety.

I also introduced an interactive element into the model by attaching nylon filaments and suspending them from toothpicks from the *active driver's eyes*. This represented the lines of sight for physical actions in the driving task: for *Perception* (scan, identify and predict) for *Decision-making* and *for Action* in the section related to driving on the model. The filaments linked these driver functions to other related factors or dangers in the traffic environment. By adjusting the tension of the filaments, I could demonstrate how the effects of alcohol or lack of concentration might impact on efficiency in the driving task. I followed each practical demonstration by exploring a series of *what if* scenarios. Students were then ready to appreciate how the final *TAKE FIVE* checklist of traffic safety (*T5CTS*) could act as a personal safety strategy, which was also constructed and incorporated within the *3DMDT*.

I concluded the construction exercise of the *3DMDT* by inviting students to suggest what the *TAKE FIVE - STAY ALIVE* slogan meant in relation to the *T5CTS*. Having guessed *alcohol*, *speed*, *concentration* and *courtesy* earlier, the word *communication* emerged for School B students after further discussion and some additional clues. As the concluding exercise in the *synthesis* phase, I asked students to make a copy of the *3DMDT* in their diaries as depicted on an overhead transparency.

7.7. Application Phase (IV)

This phase was reduced to one exercise. The exercise required students to report what they would do in selected traffic situations. Their responses provided evidence of

the potential the programme had for affecting change in students' perceptions of safety and risk, what possible limitations existed for them and what might be needed as further support for adolescents.

G. Application exercise – Ten traffic scenarios.

Activity: This exercise consisted of ten open questions each associated with authentic traffic scenarios. For example, "your friend on a full licence offers to take all eight friends (including you) home after a party in a car built for only five" (see Appendix M, Application Questionnaire, Q2d). I restricted this task to students in School A because of the lack of time.

Intended purposes / rationale:

For the students:
- to demonstrate their ability to identify safe choices as responses to traffic situations;

For the teacher:
- to assess students' perception of safe behaviour in traffic situations;

For the researcher:
- to provide a summative exercise for the *TAKE FIVE* programme.

Procedure followed: I administered the questionnaire (Q2d) to students in School A on the last day of the course. I had insufficient time to administer it to students in School B.

Observations / data:

- In Questions 1 and 3, 2 and 8, involving speed and alcohol respectively, most students chose the safest options (11/14, 14/15 speed; 14/15; 14/15 alcohol).
- Situations involving the influence of peers (Questions 5, 7, & 9) caused greater confusion among students, resulting in several choosing options involving unnecessary risk-taking (7/14 undecided or prepared to contravene restricted licence; 3/15 undecided or prepared not to caution friend driving recklessly; 7/15 prepared to travel in overloaded car).
- Incidents involving abuse and courtesy caused confusion over safe options (as in the previous implementation) with several prepared to take risks or ignore the most courteous option (Questions 6 & 4; 6/14 would return abuse; 6/15 prepared to do nothing or avoid assisting stalled driver).

Explanations / Interpretations

i. It was possible that student awareness about the dangers of speed and alcohol involvement was attributable to the high profile DE and community messages had about these issues.

ii. It was also possible that insufficient community and media attention has been focussed on *the influence of peers*. Almost half of the sample was prepared to

accept risks associated with licence non-compliance such as overloading and taking passengers on a restricted licence.

iii. It was also possible that insufficient community and media profile had been given to *courtesy* and *abuse* as almost half the students were prepared to return abuse or ignore the most courteous options.

Conclusions: The results highlighted a need for adolescents to have clearer guidelines of safer practices in regard to peer pressure and how to counteract coercion. The benefits of courtesy and the consequences of the use of abuse were topics that I felt required more attention.

Modifications: The questionnaire had highlighted several concerns that could be addressed with more community assisted education support and social modelling.

7.7.1. Results from Final Questionnaire

The questionnaires Q2a & 2b (Appendix G) were similar to those used in the first implementation except that a five-point Likert scale was used for each question instead of three. The results summarised below relate to data from both school contexts unless mentioned otherwise. The number of students had been reduced to 18 by attrition as had occurred in a similar manner in the previous year. A more detailed summary of responses is given in Appendix V.

i. Fewer students had driven without a licence than last year;
ii. Similar egocentric reasons were given for driving without a licence (too lazy; couldn't be bothered; too expensive to get a licence);
iii. Half of the 26 responses agreed that a driver's licence was important;
iv. The likelihood of being involved in a crash was recognised by more students;
v. Most participants agreed that speed was dangerous;
vi. Many students were not convinced that abuse was inappropriate in traffic;
vii. Over 3/4 agreed with sentiments about being courteous to other drivers;
viii. Suggestions for lowering road trauma mostly reiterated current policies of reducing speed and not drinking and driving. One or two made innovative suggestions like the need to develop a breathaliser-key lock device for cars;
ix. Responses against drinking and driving showed a 97 percent consensus.
x. Misconceptions about the safety of not wearing seatbelts remained for some;
xi. The greatest consensus in response occurred for the statement "it is the duty for every person to do his/her very best".
xii. Most acknowledged from the programme, a greater global appreciation of safety; a need to be more careful, to show courtesy and concentrate more.

7.7.2. Feedback Questionnaire (Q2c)

For the student feedback questionnaire (Appendix L), I identified these potential categories of response to each question: (a) a positive outcome from the intervention described with accompanying comments, (b) single word response indicating

agreement or enjoyment, and (c) a response that was either negative or unanswered. A combined total of eighteen students responded to the questionnaire. A more detailed summary is given in Appendix W.

i. A third of the students found video excerpts helpful;
ii. Half of the students found that the *3DMDT* (driving task model) was a positive influence;
iii. Half of the students appreciated activities using real life scenarios;
iv. Half of the students enjoyed the visits from special guests.
v. The overall responses of students to the programme were mostly positive.
vi. Students found the least enjoyable part being writing and bookwork (four);
vii. The most enjoyable part for half of the students was watching videos;
viii. Students made few innovative suggestions for improvements.
ix. Two thirds of the students recalled three or more of the five factors contained within the slogan *TAKE FIVE - STAY ALIVE.*

Students mostly showed an improved appreciation of youth vulnerability and the likelihood of some peers continuing to take unnecessary risks.

7.8. Research Questions

The issues arising from each research question were complex. An overview of the second implementation is given in Figure 7.2 below with important issues being briefly summarised under each research question pending a more detailed discussion in Chapter Eight.

7.8.1. Research Question One: What knowledge, skills and attitudes are necessary for adolescents to be safe on the road?

I concluded that while the safety-related knowledge, skills and attitudes surveyed in DE resources listed in Appendix B are necessary for adolescent safety, they are not adequate on their own to guarantee student safety. A teacher still needed to make adjustments to activities before students might consider changing their outlooks. Student social behaviours also required careful and skilled management over and above strategies for effective presentation if DE content was to be successfully conveyed to and accepted by students.

A number of barriers such as influences from peers and family stood in the way of students assimilating safety messages and often limited their cognitive, cultural and social views. The effect for students seemed to result in increased levels of egocentric self-interest where the immediate driving task often became the prime focus (at a micro-focus level) rather than a broader (macro-focus) level of traffic safety. I sought to identify factors that could assist adolescent DE students to assimilate greater levels of safety knowledge, skills and attitudes.

SUMMARY OF POSITION AFTER IMPLEMENTATION TWO: AR CYCLE THREE
The Teacher's Position: My focus on student learning needs, including a redesign of tasks to encourage students to build on their strengths, develop greater independence and become active learners, resulted in improved climates in each class and improved levels of student attainment.
The Students' Position: Students were more comfortable with learning tasks in this implementation and showed more confidence when answering questions and seeking answers for themselves. A number of students who were hard to motivate produced a minimum amount of work and were not prepared to commit to supporting the safest alternatives. A high level of absenteeism was consistent each year and between contexts, but class climates were more pleasant and students were more cooperative.
Knowledge, skills and attitudes necessary for adolescents to be safe on the road: Similar results to the previous implementation were found. High profile traffic safety guidelines (alcohol / speed) with *TAKE FIVE* programme content provided consistently high students' responses. Where few guidelines existed (about abuse, courtesy and peer pressures) lower levels of safety and higher levels of risk were found.
Important features of being an adolescent that needed to be considered in a DE programme: Fewer students reported driving without licences but just as many knew others who did. The students gained greater confidence and were less reliant on the teacher when activities provided more support for their learning difficulties. Regular absenteeism impacted negatively on student learning.
Teaching methods and associated learning theories that could assist in the development of a DE programme: A constructivist approach to learning had assisted me to redesign tasks and encourage deeper learning from students. As a result, students were more amenable, compliant and supportive of the programme. The structure and presentation of the *PDE Text* allowed a more relaxed learning approach to develop than the previous year.
Teacher attributes that were important for the delivery of DE in the classroom: As a self-reflective teacher, I had developed a teaching-learning checklist with which I could critique my own practice. The model allowed me to improve programme content, delivery, student learning and my practice as a teacher. I became more relaxed and less judgmental.
Factors that contributed to the effectiveness of the programme: A closer alignment of student and teacher goals occurred through negotiation, following discussion, observation and the analysis of data from questionnaires. Adjustments to the programme were made following student feedback, which was necessary to determine effectiveness.
Effective elements of the programme: Reality activations explored authentic outcomes, consequences and likely antecedents. Students responded more to concrete-operational experiences. Activities involving a mix of visual, tactile, auditory, affective and kinaesthetic elements were appreciated.
Changes to the programme in light of the third cycle: Further improvements could be achieved by establishing minimum topic coverage (and attendance levels), acknowledging course attainment or completion through some recognition of completion and the potential for increasing safety. This could include NZQA Unit Standards and further community liaison and input.
Teaching & Learning Development: An understanding of learning theories, methods of teaching, student ability levels, curriculum and task design and personal self review all contribute to a complex mix of action and reaction that occurs during classroom practice. This pedagogical knowledge needed to be supported by the ongoing formative assessment of student outcomes from teacher and learner perspectives if improvements in DE were to occur.
Research / researcher issues: A further improvement in the programme had occurred but the extent to which students would be convinced to change their ideas about safety and risk was limited. DE content and activities were sufficient for safety but many barriers to learning (originating from peers, parents and the students themselves) remained in place.

Figure 7.2: Summary of position after implementation two: AR cycle three

In addition I found that:

- Safety knowledge, skills, and attitudes, and a teacher's pedagogical expertise and experience in DE needed to be integrated with an understanding of students and their learning preferences before most adolescents would be motivated to change their perceptions of danger, in particular a constructivist approach was often successful;
- More information relating to abuse, courtesy, the vulnerability of passengers and peer influence was necessary before adolescents would be prepared to listen, accept and apply safety messages in their responses;
- Reconstructions of authentic crash scenarios enabled many students to appreciate how serious injuries were and how devastating they were for victims, innocent people and extended family members. *Reality activations* also allowed students to appreciate the length of time required for convalescence.
- Students' misconceptions about safety (e.g., like not wearing seatbelts in the back seat) were likely to remain with them until a better alternative was presented for them to consider.
- A critical ingredient for students to be motivated was a teacher who accepted students as they were, encouraged them and took notice of their needs for support.

7.8.2. Research Question Two: What important features of being an adolescent needed to be considered in a DE programme?

I found the students, as transition students, had specific learning needs that needed to be met before they could acquire some of the knowledge, skills and attitudes that I set out to help them learn. At the conclusion of the second intervention students showed a need:

- to be accepted as they were with whatever learning difficulties they had,
- to overcome personal barriers to learning associated with past difficulties,
- to know that they could achieve and be successful learners,
- to resist negative social pressures exerted on them by their peers, family and others.

Some students were not committed to learning about DE and when I challenged one student about unacceptable behaviour in class in School A in week three, the end result was that three students left the class for another curriculum option the next day.

Some students who appeared over-confident socially in the classroom showed poor levels of individual achievement and application. Other features, which became obvious from student conversation and disclosures in class were:

- higher levels of reported risk-taking in their written work,
- lower levels of thinking (single word answers) in response to questions and problems,
- difficulties linking abstract concepts with safety.

I was challenged to consider how to increase student awareness of traffic problems on a global basis (beyond the driving task itself) and how to encourage higher levels of

thinking and reasoning. I noted in one lesson that in one class the activity "was very stress-free for me". This was partly due (as my diary indicates) to the fact that I had decided not to spend time getting the students to think about particular concepts. Their main task was to copy a summary diagram from an OHP into their books" (RD: A, August 18, 1997). This activity kept them quiet but failed to engage their brain.

I also found a number of consistencies in behaviour when working with these students (each year and between contexts). There were:

- similarly high levels of absenteeism;
- students in each context who procrastinated by talking to their friends and delayed getting started during a lesson;
- slow rates of progress overall by members of each class.

I was concerned about the impact of absenteeism on the progress of the programme and the lack of continuity between activities for some students. Absenteeism acted as an impediment to learning when absentee students tried to make links between topics and when trying to understand events presented sequentially. Transition students needed more frequent reinforcement and responded better to simple tasks and regular routines to understand safety concepts.

When I could provide tasks like interviewing crash survivors that supported their specific learning needs, I found students gained greater confidence, they were less defensive or antagonistic and became less reliant on me as the teacher. By contrast, I noticed that the culture of School B students was more conducive to independent learning.

7.8.3. Research Question Three: What learning theories and teaching methods could assist in the development and implementation of a DE programme?

I found the following learning theories useful:

i. A *behavioural approach* prompted me to introduce activities that highlighted the serious consequences from crashes and of unnecessary risk-taking.

ii. Piaget's *cognitive learning theory* provided me with a schema to review student cognitive abilities. Drawing on his distinction between concrete and formal operational levels, I designed and redesigned activities that were more appropriate for student capabilities.

iii. *Constructivist* learning theory introduced me to the concept of *viability*, which helped me recognise student perceptions of safety that were in effect *misconceptions*. This also enabled me to review tasks and activities to provide additional support for students to increase their appreciation of benefits from safety or the disutilities from road trauma.

iv. *Social learning theory* provided a rationale for the use of experienced drivers as positive role models.

I found the following teaching methods were effective for the DE students in both contexts:

i. *Group work* was less threatening for them in the classroom, it enabled less confident students to achieve more and was more culturally appropriate for Maori students.
ii. *Discussions* were more effective in small groups because of most students' lack of personal confidence and difficulties they had expressing ideas.
iii. *Teacher modelling* provided a blueprint for students to follow and enabled them to gain an overview of the task.
iv. *Visual* elements such as pictures and models gave students insights into concrete representations of reality, which helped many to develop a better understanding of abstract ideas.
v. *Role-plays and debates* were useful activities that counteracted an egocentric focus and introduced other equally valid perspectives for students.
vi. *Direct instruction* was effective when linked with modelling. An entire class could receive a consistent message about following routines, and processing new vocabulary.
vii. *Reality activation* exercises acquainted students with authentic consequences from crashes by establishing personal connections with factors in the scenarios. Such authenticity "could not be shrugged off easily".
viii. *Routines* (like daily crash analyses) and activities involving different learning modes enabled slower students to receive regular reinforcement and develop new skills and abilities.
ix. A predominant emphasis on tasks with *concrete* support materials and activities using *visual* aids helped students make links with abstract concepts to express ideas showing relationships between cause and effect and action and reaction.

I found greater depth of understanding and empathy with others expressed in student diary entries than was obvious in class discussion. Students became less complacent and more aware of danger following interviews with crash survivors.

7.8.4. Research Question Four: What teacher attributes were important for the delivery of DE in the classroom?

The most important attribute initially was to be critically self-reflective about my own practice. I was able to adjust assumptions that were not appropriate for the students and effective learning. My construction of *a checklist of teaching and learning* provided a framework for review of my practice through AR. The checklist (Appendix K) acknowledged four specific roles of the teacher, i) the DE curriculum manager, ii) the person, iii) the professional pedagogue, and iv) the *teacher as researcher*

As the *curriculum manager*, I had surveyed the field of DE and had collected and collated a number of resources and activities into a DE programme for students.

As the *teacher as person* I had developed a more informal approach to my classroom style, choosing to circulate around students more and being less confrontational. Disciplinary problems did not disappear but the impact of problem students on other class members and programme was reduced considerably.

As the *professional pedagogue* I had considered the many problems students had exhibited in the classroom and I had trialed a number of ways that students could be supported in their learning. My attention to student achievement, programme effectiveness and teacher effectiveness was on-going and I was ready with other ideas to put into practice which would result in additional improvements later on.

As the *teacher-as-researcher* I had used AR and the narrative to retell and review the data from students so that the process of change could be sustained and my practice as a teacher could be optimised for the benefit of the student.

7.8.5. Research Question Five: What factors contributed to the effectiveness of the programme?

The factors that contributed to effective learning situations involved the validity of educational objectives, the relevance of educational objectives, the content and structure of instruction, the instructional process, and the acceptability of a programme for teachers and students.

The *validity of educational objectives* (teaching objectives and learning outcomes) was not in question. However, the educational objectives needed to include student input if students were to be effectively engaged. This could involve, in part, a negotiation of some curriculum activities to include opportunities within the programme for driver licence revision to occur prior to learner licence tests although this did not happen in this implementation. The realignment of objectives was, therefore, more relevant for students and contributed to a greater congruency in the direction of the programme and in levels of attainment for students.

Student learning needs were better catered for with a range of tasks involving concrete and tangible supports. These included visits from guests, the construction of a model, and the development of a textbook. Through continued group work and a less formal classroom atmosphere, students were supported more and threatened less by activities like full class discussions.

As a result of the adjustments made to the programme and approach by me as the teacher, students began to show evidence of improved levels of learning. They began to show abilities to think more deeply, to understand abstract concepts more

perceptively, and to develop greater personal confidence and independence of learning. In some cases it was possible to see barriers to learning being overcome as the interest in topics and activities increased.

7.9. Closing Note about the second implementation

At this stage, I had a clearer understanding of teaching DE to adolescent students. I could identify what experiences and curriculum content could heighten student awareness of safety. I could understand the perspectives of a subgroup of adolescents better and acknowledged their particular needs. They required a range of activities and teacher support to counteract an egocentric and often peer-influenced approach to safety.

I accepted the students and their limitations, and used a range of student-focussed teaching methods and strategies to provide extra educational support for them as they reviewed and reconstructed their perceptions of risk and safety.

I was able to review my input and influence and make adjustments to programme content, activities and my approach. I adopted a more informal and facilitatory manner.

As a result of these factors, the *TAKE FIVE* DE programme:

- Had a more consistent and achievable set of goals and direction,
- Provided more enjoyment and a sense of progress for students,
- Provided me with higher levels of satisfaction and success as the teacher.
- Provided me with a clearer insight into the value of a classroom based DE programme.

This narrative of the second implementation, highlights how I was able to improve the effectiveness of much of the programme for students and how I could cover main programme elements in a shorter duration the second time around. I also reflected on the steps I took and the conclusions I reached that might offer assistance to other teachers and personnel involved in DE and DE research.

In the next chapter, I use the research questions, to explore factors necessary to consider when seeking to improve the effectiveness of developing and implementing a traffic safety programme for DE students in the classroom.

Chapter 8: Discussion

8.1 Introduction

I begin this chapter with an overview of the study and revisit the assumptions I used as a basis for developing this DE programme and its activities. I then return to the five research questions and reflect on empirical work undertaken in the research by discussing assumptions and issues related to them. In Chapter Nine to follow, I report the overall conclusions, including my use of action research and the narrative and consider implications from the study for future research and the development of an effective DE programme.

This research was a personal response to my involvement in a fatal crash with two adolescents. Adolescents are the most vulnerable group of road-users, which is a phenomenon described as "tragic and pointless" (McGrath & Chu, 1999, p. 293) and continues to be reported in many countries (Brown, 1999; Cockfield & Healy, 1999; Fitzgerald, 1999; LTSA, 1998, 1999; MacKenzie, 1999; Sabey, 1991; Storie, 1977; Whines, 1988). While outcomes from a classroom-based DE programme using a small sample of students could not have an influence on national and regional adolescent crash statistics, I was curious about what impact a DE programme might have on adolescent students.

I was concerned about the effectiveness of instruction and the value of a DE programme targeted at adolescent safety, in particular, for adolescents who were regarded by their schools as having difficulties with learning. In my preliminary reconnaissance of DE related literature I found that:

- Few reports on DE programmes could describe in detail how programmes were developed or whether specific skills, knowledge and attitudes were helpful or appropriate for students when developing positive perceptions about safety;
- Most programmes appeared to be geared for academically able and confident students and took no account of variability among students, different learning styles, barriers to learning and sociological issues that can operate in the classroom;
- Adolescent students were the prime focus for DE programmes but a student perspective about programmes was seldom presented;
- It was not clear what learning outcomes for student safety could be expected from a classroom-based programme, what road user roles other than driving were important and what factors contributed to effectiveness; and

- Few programmes acknowledged any alignment with theories of teaching and learning. It was not clear what difficulties students might have learning about safety and what role the teacher might need to play to help students overcome them.

8.1.1 The scope

Addressing five research questions in particular, I explored:

1. The design, implementation and evaluation of the *TAKE FIVE* DE programme that was intended to help students acquire knowledge, skills and attitudes that would keep them safe on the road;
2. What influence the characteristics of adolescents in two DE classes might have on the DE content and activities I had prepared and the teaching strategies I used;
3. Theories of learning and strategies for teaching that could better assist adolescents achieve learning goals in the programme;
4. Teacher attributes required for the successful implementation of the programme in the two DE classes; and
5. What factors assisted students to develop more positive attitudes towards and views about driver safety.

While I acknowledge that further ideas and resources in DE have been developed since 1997 (such as the *Framework for Driver Education* [RTA, 1997] and a DE report *The State of Driver Education* [Lonero, 1999]), a number of aspects of classroom practice for adolescents have yet to be addressed adequately in DE research. In view of these issues, this study offers unique insights into issues that arose from developing and implementing a DE programme for DE students.

8.1.2 Initial assumptions prior to Implementation One

I revisit each assumption about teaching and learning that I held prior to the first implementation. Each conformed largely to a view of education, conveyed in part by existing DE programmes, that students would be receptive to learning, that learning would mainly involve knowledge acquisition of safety topics, and that content, prepared by experts, would be relevant and effective for students as planned (see Figure 8.1).

Soon after I began, I learned that the classroom practice of DE was different from what I had anticipated and I needed to review all factors contributing to teaching and learning to gain a thorough understanding of the complexities. Although each assumption could be discussed under several of the research questions, I have assigned each assumption and discussion to an appropriate research question.

SUMMARY OF INITIAL ASSUMPTIONS	
ASSUMPTIONS	BASES FOR ASSUMPTIONS
1. Adolescents would take some degree of responsibility for the problem of over-representation in crash statistics from the study.	-Students would be able to understand their vulnerability from crash statistics, in line with b*ehavioural* & *cognitive* learning theories.
2. Students would make personal links with the teenager who was fatally injured from my personal account of a crash that I was involved in.	-*behavioural learning theory* through exploring the consequences of crashes; -*propositional learning* in associative learning theory.
3. Students would respond enthusiastically to matters involving driving and DE.	-literature supporting DE being *of high interest* to adolescents (Simeon, 1979).
4. Students would respond positively to opportunities to show *independent learning skills*.	-educational literature & personal parental experience concerning *interactive learning*, *problem solving* and *child-centredness*.
5. Students would be able to make 'abstract conceptual links' with global themes concerning safety and lower levels of risk.	-*cognitive stage development* theory (Piaget *formal operations*). -personal teaching and parental experience.
6. The programme would enable students to synthesise a safety strategy from the activities and content of the programme.	-synthesis of safety ideas in line with *health promotion* models.
7. Students would find *reality activation* activities helpful as further motivation for being safer and taking fewer risks.	-the reality of personal crash experience. -using *negative reinforcement* in relation to *operant conditioning*.
8. Students would personalise positive learning through an exercise in the "arts".	-using the arts as *mediation* and a *reinforcement* for learning (Dryden & Vos, 1993; Sandor, 1966)

Figure 8. 1 Summary of initial assumptions

8.2 Research question 1: What knowledge, skills and attitudes were necessary for adolescents to be safe on the road?

To answer this question I summarise a) the knowledge, skills and attitudes deemed necessary in DE programmes and resources to keep adolescents safe, b) the areas that required further exploration, c) the approaches that I took in the research, and d) the assumptions I made about student abilities, teaching and learning and DE activities related to this question.

My review of 18 DE resources in Chapter Two revealed that:

- There was a good range of cognitive, perceptual (hazard recognition) and interpersonal skills advocated in DE resources,
- Little if any criticism could be levelled at the range of content for its coverage of safe practice: content dealt with areas of personal and social issues, peer issues,

mechanical and technical knowledge of the *Road Code* the rights and responsibilities of self and others and influences on driving,

- That the attitudes being promoted shared a theme of personal responsibility in regard to being a positive role model, complying with traffic regulations, showing tolerance for others, protecting the vulnerable and resisting negative influences.

There were some issues that were omitted that I wished to explore:

1. With DE programmes focussing primarily on developing drivers, I wondered what other road user roles, in particular the role of being a passenger, could be covered;
2. How topics about *courtesy* and *abuse* in the driving task were regarded and whether the study of them had the potential to contribute to a more positive traffic environment;
3. Whether students were able to become collaborative partners in the programme by providing positive contributions towards programme development and feedback.

As part of my approach, I agreed with an LTSA suggestion that a DE programme should promote *driver improvement* rather than *increase driver exposure* to traffic (RTSRC, 1994). I drew on personal experiences of crashes as a teenager and adult to develop the concept of *reality activation.* In addition, I rationalised a systematic and sequential structure for an alternative programme for students. In this *TAKE FIVE* DE programme, students were given opportunities to: *analyse* crash scenarios; *confirm* crash factors as either *human*, *vehicle*, or *environmental*; *synthesise* patterns into safety strategies; and *apply* the safety knowledge gained in these classroom exercises as a positive *safety code of practice* that could be applied in traffic-related situations.

8.2.1 My Assumptions

The following assumptions from Figure 8.1 were relevant for this question.

- Adolescents would take some degree of responsibility for the problem of over-representation in crash statistics;
- Students would make personal links with the teenager who was fatally injured in a crash I was involved in; and
- Students would respond enthusiastically to matters involving driving and DE;

8.2.2 Discussion - outcomes in practice

I found only after a short time, that a large number of students *were not ready to acknowledge responsibility for the general problem of adolescent over-involvement,* although many students were concerned about outcomes that could arise

from crashes. At least two factors seemed to contribute to their lack of readiness or concern. First, students had a keen interest in practical *driving* and driving licence matters rather than a general concern for safety. Second, they held a predominantly egocentric view of traffic safety and were less concerned about a sociocentric outlook or the way other people might be affected by their actions and behaviours as road users.

Nearly half of the students in School A conveyed to me that the practical areas of *driving* and *getting a licence* were of a greater priority for them than were concerns about adolescent vulnerability and safety. Most DE students in School A had expected that outcomes from the programme would continue to include other chances to obtain a driving licence or opportunities to revise the *Road Code*. This was in spite of my confirmation with DETs and the students themselves that these topics would not be a part of this programme.

This conflict of interest led me to reconsider the assumption that *students would respond enthusiastically to matters involving driving and DE.* Students certainly were enthusiastic about *getting a licence* and *driving*, but when it came to exploring issues involving the safety of self and of others beyond the driving task itself, actions and reactions from students showed greater resistance and less cooperation. Under these circumstances, I realised I needed to *negotiate* changes to the programme, its content and my delivery for students, if I was to engage with them more effectively.

I was disappointed to find a limited level of student interest in my personal account of *a fatal crash involving someone of their age.* A possible reason was a belief they held that my story was an event that had happened to *someone else* and the chances of them being personally involved were remote. Many claimed that they were *always careful* and avoided such contingencies and several believed that their crash-free existence was proof (viable to them) that it would stay that way.

I provide additional comment about student characteristics and their feedback about tasks and content in the *TAKE FIVE* DE programme in the next two research questions but conclude my discussion of issues to do with DE content next.

8.2.3 Discussion – other observations

Four factors relating to content stood out for me at the conclusion of both implementations. First, I felt that topics about *courtesy* and *abuse* in the traffic

environment were necessary to include within a DE programme because many students failed to recognise the potential benefits of courtesy (or the dangers of abuse) in traffic situations. In the responses to questionnaires Q1a, Q1b, Q2a and Q2b, I found that students were more undecided about the safest options to take in regard to *abuse* or the values *courtesy* could have for them, "if someone got in their way". This was in contrast to responses to other traffic problems that had higher public profiles, namely alcohol or speed related issues or the non-wearing of seatbelts (see Appendix V).

Second, in an application exercise following the second implementation, more students compromised safety, or were prepared to take more risks, *when peers were involved* in the activities, in spite of the fact that some of the proposed actions clearly contravened traffic regulations (see Appendix W).

Third, student responses to a maxim that Best and Edwards used in their 1982 driver education research showed the highest level of agreement each year. On the basis of this consistency, it appeared that the tenet *it is the duty of everyone to do their best* had some potential to provide students with an effective rationale for improving personal safety through more careful decision-making.

Fourth, it was clear that students were much more focussed on *driving* and topics related to this than they were on safety in a broader sense. I felt that many students were not ready to give a full commitment to *safety*. A holistic approach to safety seemed to be too passive for them to be concerned about. I also found that the title of *Driver Education*, used for school-based programmes, predisposed students to a *driving focus* rather than providing them with a broader approach to traffic safety. This effectively meant that other equally important road user roles, like being a passenger, a cyclist, a motorcyclist, or a pedestrian were treated with less enthusiasm or seriousness than driving-related topics. I was often interrupted in the School A classroom, when dealing with general topics such as sharing the road with heavy vehicles, commuters and overseas tourists by students saying "what's this got to do with driving or getting a licence?"

8.3 Research Question 2: What features of being an adolescent need to be considered in a DE programme?

To answer this question I review information available from DE related research, information contained in educational literature, observations I made at the outset and the assumptions I began with. I then outline characteristics that I found were important as I implemented the *TAKE FIVE* programme.

8.3.1 Introduction

DE research and reports of DE have seldom outlined:

- What characteristics adolescents are likely to display in the classroom,
- Whether adolescents are likely to be motivated to learn about safety,
- How adolescent characteristics can impact on learning,
- Whether impediments to learning exist and how they might be addressed, or
- Whether specific DE content was appropriate for them and for safety.

It is possible that a lack of information about such matters has stemmed from a belief that adolescent characteristics were not important to refer to. Maybe also an assumption existed that adolescents would accept safety instruction or programme materials provided for them. Although negative behaviour pertaining to subgroups of adolescents has been acknowledged in one LTSA report, "the goal of changing behaviour of this subgroup [has been regarded as] beyond the realm of road safety" (LTSA, 1995a). Another possible reason for a lack of reference to adolescent characteristics relates to the absence of comprehensive evaluations of DE programmes or their implementations (Lonero, et al., 1995; Page et al., 1992a; Rothengatter, 1994).

8.3.2 My Assumptions

On the basis of my review of literature (in Chapter Two) and reflection on my personal experience of working with adolescents and adolescent daughters, I began the study with the assumptions that:

- Students would respond positively to opportunities to show *independent learning skills*.
- Students would be able to rationalise using *abstract concepts* associated with traffic safety and demonstrate ways in which such concepts could relate to personal safety goals.
- The activities and content of this DE programme would enable and encourage students to begin to synthesise a personal safety strategy.

8.3.3 Discussion - Outcomes in practice

I found that a majority of students (from School A mostly), were apprehensive when they were asked to undertake tasks that required them to use *skills of independent learning*. The independent learning approach, which I found worked well with high achievers, confident readers and those intrinsically motivated, seemed to be a threat to transition students because it could expose how "dumb" they were. Some had already confided to me that they were "the dummies". These students often lacked an incentive or ability to know where to begin. I appreciated that working in groups was culturally appropriate for Maori students as group-work aided collective knowledge development for the mutual benefit of group members (whanau). I found that group-based tasks provided a similar level of support for slow learners and low achievers by offering them protection against an individual's perceived weaknesses that occurred when they were exposed to class members in whole class situations. It also provided them with a more intimate forum within which personal confidence could be developed. I found most students made greater progress when there was a friendlier atmosphere and they had the support of peers working with them in group situations. In the first implementation I had tried (in ignorance) to split up friendship groups to reduce instances of off-task behaviour. However, I found the opposite effect occurred. By splitting students away from their friends, I increased their sense of insecurity which manifested itself in less action, less effort and worse behaviour. It was far better for me to design tasks that were matched to student abilities so that they could remain in their groups and provide them with a familiar structure of learning support within which independent learning skills could be gradually introduced as their personal confidence grew.

Many DE students found *difficulty working with abstract concepts* about safety topics. Spending time exploring these issues, like what personal and social responsibilities were required of road users beyond the careful manipulation of a vehicle, could often arouse anxieties similar to those I have already alluded to concerning independent learning tasks. To overcome this I designed and introduced experiences that were more practically oriented or that used symbols to represent abstract ideas. I explain these activities in more detail as a part of the next research question.

The *TAKE FIVE* programme *did* enable many students *to synthesise traffic safety strategies* from within the activities and programme content but the process was much less straightforward than the assumption implies. Before any synthesis could occur however, I found three elements needed to be present. The content needed to be appropriate and relevant for the interests and abilities of students. Students needed to be sufficiently receptive to the content, tasks and activities. The contribution a teacher provided, when organising and selecting content, arousing interest, introducing the topics and activities, guiding students in the learning processes and assessing the progress they were making, acted as a catalyst or *growing medium* in which knowledge could be nurtured. All three elements were reciprocal in function and when finely tuned were more likely to result in effective learning.

8.3.4 Discussion – other observations

The students in this study were adolescents who were physically similar to mainstream adolescents. However, there were differences, mainly associated with learning, which defined them as a subgroup of adolescents known as *transition education students* in each school. Transition education students were often placed in school subject streams as a result of previous learning difficulties. Such streams were less academically competitive, provided more life-experience opportunities, and contained fewer examinations than more academically based subject streams. This structure was designed so that transition students could develop skills, knowledge and attitudes suitable for responsible citizenship in the workforce and community.

Apart from some exceptions, I found that there was a level of consistency in the characteristics shown by both groups of DE students in this study. I observed the following:

1. Many students had difficulties with, and a lack of confidence in reading, associated vocabulary, and comprehension that was manifest in weak vocabulary skills, poor reading fluency, and difficulties with descriptions, expressing ideas and working with language. Collectively these difficulties often existed as barriers to further learning, or contributed to other difficulties in processing ideas or contributing effectively to classroom tasks. As a consequence these students relied more heavily on me as the teacher for affirmation that what they were doing was acceptable and that they were making progress. Their greater reliance

on the teacher was consistent with research conducted on work experience students who "tend to report significantly lower self perceptions of academic ability, and a poorer sense of social/personal adjustment than students achieving at average or above average levels in schools" (Ryba, Edelman & Chapman, 1984, p. 84).

2. Tasks requiring competency in communication skills (as above) often resulted in students avoiding or delaying work, being easily distracted, being prone to procrastination, attributing work delays to external causes (lost equipment) and exhibiting various forms of compensatory behaviour (being socially overconfident, loud, brash, and somewhat arrogant, reporting that they drove without licences). This tendency towards optimism bias arising from not being caught or sustaining injury was similar to the observations made by Silcock, Sunter, van Lottum, and Beuret (1999) who noted that "unlicensed drivers seem to have a high opinion of their driving skills" (p. i). They also reported that unlicensed driving by students could be linked to those who had experienced difficulties with theory tests, which was a skill that relied heavily on an ability to read. I found further evidence of student overconfidence and optimism bias in student responses below:

   - When students advocated not using seatbelts in the back seat and failing to appreciate danger and risk because they thought they were always being careful;
   - When students could not understand that it was not the media picking on adolescents when crash statistics showed them as being more vulnerable to crashes than other populations;
   - When students were unable to appreciate why Victorian drivers were more careful or less dangerous than New Zealand drivers even though they had similar sized populations and Victorian crash statistics indicated that they had fewer deaths and injuries per capita than in New Zealand.

3. Student cognitive abilities in classroom activities operated mostly at an elementary level to begin with. This was primarily egocentrically focussed on the skills of getting a licence and gaining driving experience rather than on factors contributing to safety on a broader sociocentric scale. Most students displayed difficulties in expressing ideas and using deep thinking skills involving the interpretation, analysis or manipulation of information. Early in each intervention, students responded to questions with *one-word answers* or *single concept ideas*. They coped more successfully with tasks that required answers to

closed questions than they did exploring possibilities associated with *open* questions. Student reaction to open learning tasks often resulted in forms of procrastination, distractive behaviour, and work avoidance. I found, as Dulit (1975) suggests, that Piaget's formal-stage thinking is said to be "fully developed in only a modest proportion of the population and only very partially developed in most" (p. 551). This "appears to be in conflict with the Piaget-Inelder publications on the formal stage...[where they indicate] that formal-stage thinking is the rule in adolescence" (Dulit, 1975, p. 552). I found that working with concrete representations of abstract concepts was more helpful to these students in developing an understanding of abstract ideas. It also helped their ability to think about cause and effect, and the relationships between factors in the driving task. The exploration of multiple possibilities in answer to problems, however, required more effort, knowledge and skill than they were either sure of or were prepared to give. Most students had difficulties dealing with abstract concepts and many either did not have the vocabulary to help them describe what they knew or had not had the experience or cognitive skills to think beyond concrete representations I provided for them in the classroom.

4. Student absenteeism was high in each context over both years. This had important implications for the effectiveness of the programme. For absentee students it resulted in:

   - A loss of continuity from one lesson to another;
   - Disruptions to routines tasks of crash analysis and vocabulary acquisition;
   - Impediments to student knowledge construction and skill development;
   - Difficulties for students contributing effectively to activities and discussions that related to work missed, to new work introduced, or to visits or interviews they had been absent for.

For students who attended regularly, it was also unsatisfactory as absenteeism resulted in:

- More class time spent recapitulating on work already covered; and
- A slower rate of progress overall.

Students who regularly attended class, tended to process information and present work showing more detail than students who were often absent. In particular, their reports of interviews contained richer and more accurate detail and class work often showed a greater depth of understanding. The quality of work

reflected a broader knowledge base and later on included more description using more complex ideas expressed in compound sentences.

5. While most students showed enthusiasm for topics related to driving and knowledge to assist them gain driving licences, a minority of students in each class showed little commitment to strategies for improving safety. In particular, when I put pressure on some students to improve their behaviour each year in School A, the students concerned left the class for another subject having complained to the DET that the work was too hard. Many other students showed attitudes in the classroom that could be described as laissez-faire. This was reflected in standards of work showing little effort, quality of thought or care with presentation. Some students freely indicated that it was likely they would continue to be involved with risky practices in spite of lessons covering risk factors and dangers in traffic:

> Maybe because...I drive fast; going with some other fellas drunk; cos I'm crazy; because knowing me I would drink and drive; because I speed and have had some close ones already; most have had accidents and I have had one; because I will probably drive dangerously. (Student responses, School A, 1996).

As the study proceeded, I noted that differentiation could be seen between contexts even though both groups were transition education students.

8.3.5 Contextual and other differences

When looking for reasons for student difference between contexts, I discovered each school had a different decile ranking. School A was a lower decile three/four school (ten = high; one = low) with at least two decile one contributing primary schools. School B was a decile seven, single sex, day and boarding school, which drew on a wider Hamilton urban area and rural Waikato region. I found:

In School A:

- More students showed higher levels of licence contraventions each year with up to a third of students reporting that they had driven without licences in 1995 and 1996 and two thirds of students reporting that they knew people who regularly drove without licences in 1996 and 1997;
- More students were less likely to appreciate the value of a licence as a countermeasure for danger for self and others;
- More students exhibited distinctive features of dress (wearing non-regulation uniform items, damaged or modified uniforms), differences in hairstyle (dyeing, dreadlocks, fashion styles) and they often brought physical objects to class (skateboards, chatter rings, walkman players, a guitar, baseball caps).

- Classroom sociometric groupings were more socially dynamic. Informal group membership seemed to be more important for them. Socially mixed gender groups were frequently the most vocal and dominating and showed more interest in peer-related social gossip, whereas gender specific groups and groups of individuals tended to be more isolated and quiet. Boys groups were more likely to be focussed on DE-related matters or had an ethnic base (being recent Asian immigrants);
- More students were resistant to safety ideas and activities advocated by the teacher;
- More students were difficult to motivate;
- More students were reliant on me as the teacher or on peer groups for support;
- More students were involved with work avoidance strategies (delay, lost equipment, high levels of distraction, and excuses).
- Fewer students were likely to engage in classroom discussion. I noted a disturbing feature of classroom behaviour each year was a subtle but pervasive culture of intimidation. At times it was *gang-like* and rendered some activities impossible for me to pursue further or sustain. In 1996 I could not conduct full class discussions and students stated they would not cooperate when I informed them I planned to audio-tape some lessons irrespective of what motive I had. I overheard comments like "goody goody does the work" and witnessed incidences when less able but confident students were involved in harassing more eloquent or able classmates for giving answers to my questions or after providing responses to problems I had posed for them all to consider.

In School B:

- More students showed consistently lower levels of reported licence contravention each year with one out of 17 students in 1996 reporting he had driven without a licence and full compliance reported from 12 students in 1997;
- More students appreciated the safety value of a driving licence for self and others in questionnaire responses;
- The classroom social mix involved a broader range of sociometric groups. Some were aligned with sporting interests (those who were louder and more confident), with independent learning interests (those who were quieter and more conscientious), or had social interest (owners of vehicles) with the remainder not appearing to be particularly motivated (quiet with several students who lacked initiative and drive).
- More students were academically conscientious and would complete follow-up work at home;
- More students were individually confident and prepared to enter into discussion;
- More students were cooperative and supportive of my teacher expectations of their work and activities;
- More students showed enthusiasm for the task;
- More students were likely to use independent learning strategies; and
- More students became engaged in a collegial working relationship regarding experimental activities.

- Gender difference was difficult to measure between the schools as School B was a single sex boys' school. However, there were consistencies and inconsistencies in gender patterns. More males reported driving without licences and having previous crash experience with bicycles than girls in School A. When the levels of licence compliance were compared between schools, however, there were more girls in School A who had contravened licence regulations than boys had reported in School B for both years. It appeared also that students of either gender from a lower decile school were more likely to contravene traffic regulations and engage in risk taking pursuits than those from the higher decile school, irrespective of gender.

There were important implications arising from these differences for teaching and learning. I describe how I dealt with these issues in the next research question. Adolescent characteristics could also be described in terms of their influence on teaching and learning behaviours.

8.3.6 Final reflections on adolescent characteristics

I found that the characteristics of transition students *were* different from the majority of mainstream adolescents. Adolescent *diversity* and the need to cater for *subgroups* have been acknowledged more recently as important concerns for road safety (Green, 1999) in the time since both of these implementations have concluded. However, the ways in which adolescent differences impact on the type of activities that can be provided and what DE content is more appropriate in the classroom are aspects that require more research. From my perspective, I found I needed to cultivate a relationship of trust as a prerequisite for more effective learning. This was also heavily dependent on knowing what the learning characteristics of such students were and what strategies were likely to be effective in meeting their learning and traffic safety needs. Even within contexts, the lower decile DE students were less motivated and were more likely to report previous engagement with risky behaviours than students in the higher-decile school. Therefore, the lower decile students had the greatest need for the safety messages that I could offer them in a programme such as this. I describe the ways I dealt with these factors in the research question that follows.

8.4 Research Question 3:What learning theories and associated teaching methods could assist in the development and implementation of a DE programme?

To answer this question I outline the processes I followed and the issues that became relevant when determining what learning theories and teaching methods were

appropriate for students. While I had set out to develop a more effective DE programme for adolescents, I found that I had to consider the appropriateness of the programme in terms of its instructional level, students' preferred learning methods and teaching strategies *before* I could confirm effective learning outcomes for safety. I located little guidance about:

- How the learning might be assessed;
- What were effective teaching strategies;
- Whether students viewed DE programmes as being helpful or enjoyable; and
- What other student feedback was saying about DE programmes.

I began with some assumptions based on my previous experiences of teaching and my pedagogical perceptions of what might help students increase their levels of safety.

8.4.1 My Assumptions

My assumptions were that:

- Students would find *reality activation* activities helpful as motivation for increasing personal safety and reducing risk-taking.
- The programme activities and content would assist students to synthesise personal safety strategies.

8.4.2 Discussion - outcomes in practice

I found that most students increased their awareness about personal approaches to safety from activities based on these assumptions but a number of critical elements were necessary to understand before I could determine how appropriate and effective the assumptions might be. I could only determine how effective the assumptions were in relation to the responses from students and what they achieved. I discuss these factors in greater detail after providing a brief overview of the assumptions.

I found that there were benefits from *reality activation activities*, which could be seen in students' spoken and written language. However, the activation process relied on the pedagogical knowledge and skill of the teacher to be effective. Teacher skills were needed to transform passive newspaper reports of road trauma into dynamic activities that would engage students.

To varying degrees most students could *synthesise safety strategies from activities and content from the programme.* However, not all students were able to recall all five elements of the *T5CTS*. Successful learning was often dependent on the cumulative benefit of several factors. In particular, this occurred when students

regularly attended lessons, they were able to understand abstract concepts, they accepted rationales behind safety strategies and they had clearly understood lesson content provided by the teacher.

8.4.3 Discussion – other observations

The two assumptions above originated from my experience as a teacher and my early investigations into DE research and related literature. As I reviewed the changes required during the first implementation, I realised that not enough empirical evidence existed about what worked or did not work in a classroom. While many aims, tasks and activities appeared on the surface to be suitable, as some of mine appeared, they were not necessarily so in practice. It was not until my programme had been implemented with DE students in a classroom situation that I could confirm realistic learning outcomes. I had begun with assumptions based on previous experience and knowledge. However, this had not been enough for success to occur. Some of the goals I had set were too high for most of the students to attain. Even though I had spent time in planning activities carefully, that took into consideration a number of theories of learning, I had not made sufficient allowance for the real abilities of the students.

I had also begun with no teaching-learning framework against which I could match assessments of student abilities, learning preferences, and difficulties they had. It took me two weeks to appreciate what I needed to do to make improvements. Classroom management became a priority and professional assessments of students were required before I could proceed with more appropriate strategies for teaching DE content. The rest of this discussion tracks my reflections as I report on:

- My acknowledgment of student characteristics;
- My assessment of student abilities and learning;
- My teaching strategies and the adjustments I made to improve the effectiveness of teaching and learning; before I could confirm
- What the students found and what they achieved.

1. I acknowledged that off-task student behaviours contributing to an unproductive learning environment, resulted from a learning situation where "the absence of meaning breeds low engagement in schoolwork [which in turn] inhibits the transfer of school learning to issues and problems faced outside of school" (Newmann, Secada, & Wehlage, 1995, p.7). I realised also that "innovative

techniques...[did] not necessarily lead to improved intellectual quality in students' work" (Newmann et al., 1995, p.1).

Following these observations, I took three actions. First I established clear behavioural guidelines for each class to confirm the rights and responsibilities of teacher and students respectively. This addressed non-productive problem behaviours specifically. Second, I acknowledged publicly that students who had difficulties in learning had the right to ask for support and help when they needed to. This established a foundation of trust on which increased learner confidence was built. Third, I set about designing a systematic structure that would help me assess where students were and how I could support both their learning *and* safety needs. It was at this stage I realised that if existing DE programmes had failed to take account of the diverse range of *student learning needs first*, then it was more than likely that the *safety needs of students would not be met either.* I speculated that failure to deal with these factors may have contributed to the lack of success in several DE programmes in the past.

2. I then *assessed student learning abilities* based on their responses to tasks, the work they had attempted and had completed. Initially, I had not taken account of students' cognitive limitations. While I had made assumptions "about prior knowledge of students ...and about kinds of mental work that certain tasks are likely to stimulate" (Newmann 1990, p.45), which was necessary before introducing new tasks and activities, I realised that my learning goals for most students had been set too high. My teaching techniques had been more suitable for more able students. Specific difficulties I needed to account for, therefore, were: barriers to learning which resulted in procrastination, distraction, and work avoidance techniques; abstract ideas and concepts linked to traffic safety and risk-taking; ideas that were flawed and showed optimism bias and errors of attribution; and a lack of appreciation for a broader focus on *safety* (sociocentric concern). I found it more helpful to rationalise student abilities on open-ended continua shown in Figure 8.2. I could position student behaviours and capabilities anywhere along each continuum.

Continua of student abilities

Mainly found in School A		**Mainly found in School B**
High level of teacher dependence	⟷	High level of independent learning.
Preference for working in groups	⟷	Preference for working independently.
Confidence with *closed* activities	⟷	Confidence with *open* activities.
One word answers / single ideas	⟷	Complex and compound answers.
Micro-task, immediate personal focus	⟷	Macro-global long-term perspectives.
Confidence with concrete operations	⟷	Confidence with abstract ideas and concepts.
Low order (surface) thinking / learning	⟷	High order (deep) thinking / learning.

Figure 8. 2 Continua of student abilities

I found that more School B students showed abilities at the higher end than School A students. Positions on each continuum could change with evidence of increased knowledge and successful learning experiences. Once I had analysed the range of abilities students had and the difficulties they found with learning, I then could plan tasks and activities more appropriately to meet their needs as indicated in Figure 8.3. While it could be considered that high quality learning is an outcome from students working at tasks and exhibiting attributes on the right side of the continua, I could see that for transition students, it was important that they be affirmed at more rudimentary levels first. They seemed to need more regular feedback related to small gains aggregated over time that could contribute to building up personal confidence at the same time as they acquired new DE knowledge and skills.

The type of assessment undertaken was another factor to consider. I was concerned that few DE programmes were evaluated sufficiently (Horneman, 1993; Job, 1995: Rothengatter, 1994) and there was an implied reliance on summative outcomes. Summative assessments of student learning were too narrow to be of use for teachers or DE researchers interested in improving their knowledge about teaching and learning in DE. Summative outcomes do not necessarily uncover prior learning, learning difficulties and latent learning. Summative assessment is not concerned with *processes of learning* in which external variables, often not associated with DE, like high rates of absence or difficulties with learning, need to be accounted for. Summative assessment is not concerned about a teacher's teaching, the style or strategies or the appropriateness

of content and the way they all interact with students and their learning characteristics.

To assess and improve learning, I found it was more important to explore the *formative* assessments of *processes* and *products* (outcomes) from lesson to lesson, from activity to activity, and throughout an implementation. I monitored qualitative changes in verbal behaviours and in written exercises that could in turn assist me to improve my teaching and could encourage students to learn more effectively. I experimented with activities to find the best methods to cater for different ability levels, often adjusting the mix and media of instruction to ensure that students attained at their highest levels. However, each year and in each class I found that was not enough for some students. There were some students who were not convinced that they might personally benefit from being seriously engaged in learning for better safety.

3. The teaching strategies I used and the adjustments I made are summarised in Figure 8.3. They were based on student difficulties I had noted and what teaching techniques I considered were the most suitable for the development of new learning skills and outcomes for increased safety. To help me analyse teaching and learning factors, I also compiled a *checklist of teaching and learning* factors (see Appendix K), which I describe in answer to the next question, to concentrate more on student learning needs than I had been doing.

Knowledge of learning theories, in particular, *behavioural learning* theory, *cognitive-stage dependent* and *social learning theory*, *constructivism*, *situated learning* and *authentic instruction*, as well as *attribution theory* provided me with a basis for some of the changes that I needed to make.

Pedagogical knowledge and experience was helpful when I had to develop activities for more effective learning. I found that students who lacked personal confidence relied on me, as the teacher, to build up their confidence academically before they could begin to operate more independently.

Successful tasks for lower-achieving students were *closed* activities (using clearly defined guidelines and finite information) and tasks using lower-order thinking skills, "involving routine, mechanistic applications of previously acquired knowledge" [Newmann, 1990, p.44]).

Student difficulties or behaviours	Amended teaching-learning approach
1. Difficulties or lack of confidence with *abstract concepts* and *formal operational thought.*	Students needed more support using symbolic representation of abstract ideas (formal operations)(I designed road grids for Licence practice and a 3D model of driving task - *3DMDT*).
2. Difficulties with *higher levels of thinking* involving the interpretation, analysis or manipulation of information and data.	Students needed more experience with lower order thinking tasks and routines to build confidence before higher order (HO) thinking skills were introduced (HO skills were introduced following tasks that involved new vocabulary, crash analyses, survivor interviews and the *3DMDT*).
3. Difficulties with *language skills and comprehension.*	I created routines for regular vocabulary input and kinaesthetic activities to help with an understanding of abstract concepts.
4. Difficulties arising from *an immediate, short-term, practical focus* mainly on driving related matters.	I constructed the *3DMDT* with students (using symbols to represent abstract safety concepts) to present a more long-term and generalised traffic safety focus.
5. Students tended to reflect from a primarily *egocentric* outlook in which *logic could be flawed* (through *misconceptions*) *optimism bias* could prevail (concerning their driving abilities) and *errors of attribution* could be seen (in terms of personal skill and the skills of others).	I initiated routines of daily crash analyses to highlight the consistency of crash patterns, which could result from other road-users and human error. I provided tasks that introduced students to other perspectives using role-plays, social modelling & survivor and experienced driver interviews. These activities sought to convey a more sociocentric perspective for them.
6. Difficulties using *skills* for *independent learning* and for *classroom discussion.*	I used group work to build up personal confidence & to reduce learning anxieties.
7. Difficulties *understanding and retaining* lesson content and maintaining continuity.	I developed the *3DMDT* and the *T5CTS* using simplification and symbolic representation as aids to better recall.

Figure 8. 3 Student difficulties and links to teaching approaches and strategies

However, more students from School B were able to engage in open-learning situations and possessed greater confidence to explore abstract ideas and concepts. These students were more able to engage in higher order thinking levels that challenged them "to interpret, analyse or manipulate information" (Newmann, 1990, p. 44).

The strategies I used to assist each group of students learn depended ultimately on the characteristics and the learning culture of the students themselves. Ideally I hoped to encourage each student to aspire to new levels of success, as might be acquired using strategies consistent with Vygotsky's (1986) *zone of proximal*

development. An important learning approach from which I developed most of the teaching strategies was *constructivism* where "knowledge is constructed by learners and developed by experience" (Gage, & Berliner, 1998, p. 276). I organised for learning to take place:

> in rich and meaningful contexts that promote thoughtfulness, reflection, and critical thinking and incorporate authentic activities and assessments into instruction" (Cognition and Technology Group, 1996, in Gage & Berliner, 1998, p. 277).

This view of constructivism was closely linked with *situated learning* (Lave & Wenger, 1995) and *situated cognition* as contemporary ways "to conceptualise thinking and knowing" (Greeno, Collins & Resnick, 1996, in Gage and Berliner, 1998, p. 284). Gage and Berliner (1998) describe *situated* learning and *cognition* as developing knowledge from a learner's cognitive understanding that is mediated by the *situated* context or setting "within which a particular act of cognition occurs" (p. 284).

Situationists, therefore, attach importance to the relationship between *learning* and the *social situations in which the learning takes place*, which was a complement to ideas I had used to develop *reality activation* activities. I designed these activities (also based on ideas associated with negative reinforcement) to reactivate authentic crash scenarios so as to give students more realistic insights into the consequences of crashes and what might be done to reduce the risk of future danger in traffic. Regular activation of the *reality of crashes*, which could use survivors, role-plays or debates to verify or authenticate the *trauma associated with crashes*, helped students to think more deeply about road trauma and discover information often omitted from crash reports.

Having students speculate 'why' and 'how' crashes occurred was critical for encouraging them to broaden their focus and attention from the present towards the future and in particular to consider possible consequences of risky behaviours. I did not set out to give students a "discrete body of abstract knowledge" (Lave & Wenger, 1995, p. 14) that could be transported and used in other contexts. Rather I was creating opportunities for *situated learning* to occur in authentic situations where validity was established by peers working together

in a classroom with authentically based tasks to create unique and sometimes alternative outcomes from each reactivation or incident.

Lave and Wenger (1995) describe this process of learning as occurring under "the attenuated conditions of *legitimate peripheral participation*...a process that [takes] place in a participation framework, not in an individual mind...[which is] mediated by the differences of perspective among co-participants" (pp. 14-15). My *reality activation* exercises were similar to this in that they allowed students to include all contributing factors in their learning. Newmann et al. (1995) posited further that such a focus on *authentic instruction* leads to learning that has *intellectual quality* by its use of high level thinking and *deep* learning. They maintained that learning which had *intellectual quality* was dependent upon three criteria:

- whether there was *legitimacy of content* (whether subject matter was appropriate for teaching and learning);
- *accuracy* (whether materials being used as subject matter were accurate and reliable for the learner); and
- *authenticity* (whether the learning involved "construction of knowledge through the use of disciplined inquiry that had some value or meaning beyond success at school" [Newmann et al., 1995, p.4]).

4. In this section I discuss matters relating to *learning outcomes achieved by students* and *the feedback students provided.* I found several tasks had to be undertaken *before* I could assess student learning outcomes. As has been expressed already, I had to be concerned with students' learning needs before I could consider their safety needs and other learning outcomes. I then had to adjust my teaching strategies and tasks for their interest and ability levels, which involved me negotiating more appropriate DE content, on one occasion, to increase motivation.

Improvement in student behaviour occurred once I had negotiated a greater proportion of time to a driver licence focus but it was also important to stress that a change of content on its own was *insufficient* to motivate students towards accepting greater levels of safety. It required quality teaching and learning too.

I was concerned to find at the outset of this study that a *student perspective has been frequently omitted in reports of DE programmes* and *DE research.* In this study, I found most of the students who completed each course (13/15 & 16 /18)

were positive about the programme and summary comments indicated that the following DE related outcomes were enjoyable and helpful:

- The opportunity to gain a licence was a positive aspect resulting from the negotiation already mentioned (because of the shorter duration the second year, I was unable to offer students this option although there was less pressure for me to negotiate this option in 1997);
- One student claimed that, "even though I have got my licence I still learnt things" (while this comment came from the very small percentage of students who had their [full] licence appeared to relate to the use of *reality activation* based exercises);
- Practical activities (road code simulation exercise, driving task model), special guests and interviews, and the use of videos (provided authenticity to the programme and allowed them to appreciate a wider view of driving [at a macro-global level] than they were used to);
- Interviews with survivors because the things they said "were not easily shrugged off" and this provided evidence that *reality activation* was a memorable strategy for highlighting the outcomes from road trauma (details that were omitted in newspaper reports or as injuries were hidden from view);
- The *Road Code* simulation exercise because it gave an opportunity to manipulate vehicles without the danger associated with travelling on the open road (some students had a genuine fear of driving).
- The *3DMDT*, as a model, conveyed a clear idea of how many factors are associated with driving (several students were impressed that all of these factors were connected with the task of driving).

Less than a quarter of the students in the feedback questionnaires were critical of specific aspects of the programme. Frequently their criticism related to writing in books and mostly concerned activities during the first implementation. These factors included excessive teacher talk (only in the first year as I made adjustments to my delivery for student ability levels and understanding), the haiku activity (as a result of me withdrawing support for go-karting until the task was finished) and the non-completion of the *3DMDT* in School B. More frequently than not, I noted that the students offering such criticism had difficulty understanding traffic related concepts and ideas, had been absent on a number of occasions, or refused to become fully committed to aims and ideals of the programme in the first place. Student views allowed me to re-evaluate and improve what I was doing even if I had to acknowledge professional criticism of myself. As a result of altering my approach to *support and nurture* students more at their academic levels, the teaching and learning process was more enjoyable and successful for the students and for me as well.

8.4.4 Final reflections on learning theories and teaching methods

I found that three factors were critical for effective teaching and learning to occur: student receptivity to the programme; DE content and activities that were appropriate for student safety needs and learning abilities; and a teacher who was professionally aware of both of these elements and could provide the appropriate instruction, motivation and support so that students could improve their knowledge skills and attitudes to safety. With this in mind I found that :

- DE students learned best when related lessons were given in different ways using different formats;
- Repetitive tasks helped students to develop competence and confidence;
- A behavioural approach of exploring the consequences of crashes, by activating reality resulted in most students recording realistic outcomes in their books from authentic crash scenarios;
- The study of authentic crash reports and scenarios provided real insights into road trauma that could not be shrugged off; several students included messages of self-caution as a part of their reflection on crash situations;
- Formative assessments of student progress provided information to help students construct new knowledge and take greater responsibility for their learning and help me improve my practice as a teacher;
- Regular (routine) vocabulary sessions helped to increase student understanding but also gave them an awareness of global concepts such as crash factors, and causal attributions and increased their confidence to contribute ideas;
- Regular (routine) crash analyses enabled students to build up personalised statistical records of crash patterns and factors (constructivism) most likely to contribute to crashes for themselves in the second implementation;
- Classroom interviews with crash victims and survivors helped to reinforce the negative consequences of crashes (negative reinforcement);
- Classroom interviews with experienced drivers (social learning theory) conveyed to students that all road-users make mistakes and that safety requires concentration and continual effort;
- A three-dimensional model of the driving task, that displayed global (abstract) traffic factors in symbolic forms, helped students gain a greater awareness of the impact of driving (and crashing) and how to be safer.

More importantly, I found that it was necessary to acknowledge a duality in the learning outcomes achieved by many students which I believed increased the value that a school-based DE programme could have for students. The outcomes appeared to challenge the statement that "the goal of changing behaviour of this [problem] subgroup [of adolsecents] is beyond the realm of road safety" (LTSA, 1995a). I believed that if behaviours of such groups were not addressed first, then road safety messages would be further ignored and DE programmes would continue to be reported as being less effective than I had found. This appeared to relate to another

perception that emerged from DE research reports that DE programmes should only be concerned with summative outcomes for traffic safety. DE initiatives in the past have had funding reduced (RTA, 1994c) because they have failed to show reliable long-term safety benefits. However, in this programme I found that alongside the traffic safety outcomes listed above were other *learning outcomes* that were just as important as prerequisites to improving safety knowledge and attitudes.

I found that:

- Many students showed increasing evidence of confidence and self-esteem;
- Many students could describe concepts and ideas more comprehensively in compound sentences, in ways they had not been able to before;
- Many students had developed an improved understanding of abstract concepts through the use of the *3DMDT*; and
- Many students who had increased their understanding of a range of causes and effects could now suggest ways to reduce risk-taking in traffic.

It is important, however, to qualify the degree of success. In spite of this progress, there remained a group of students who would continue to display little evidence of increased awareness of safety following the conclusion of the programme. I found that in the second year the impact of these students on others could be diminished by making pedagogical changes, in particular, to the way I operated, the presentation of the programme, and notably the use of a *PDE Text*. The role of the teacher and its influence on achievement of students in a DE classroom is the next element I discuss, prior to giving an overview of DE effectiveness.

8.5 Research Question Four: Teacher attributes that were important for the delivery of DE in the classroom

To answer this question, I begin with one further assumption and a statement from a research report that can carry negative connotations for classroom DE programmes: "Researchers agree that classroom instruction is inferior to most other methods" (Lonero et al., 1995, p.15). I then discuss teacher attributes that I found were important for the delivery of a DE programme in the classroom.

8.5.1 An assumption and statement

- Students would achieve *safety-related learning outcomes* from an exercise in the "arts".
- "Researchers agree that classroom instruction is inferior to most other methods" (Lonero et al., 1995, p.15).

8.5.2 Discussion - Outcomes in practice

I found that students were able to achieve *safety-related learning outcomes from an exercise in the "arts"* in both contexts in 1996. A key teacher attribute in the preparation of this task was to consider the needs and characteristics of the students and in this case, to apply my teacher knowledge and experience in different or effective ways that were appropriate for students. This task evolved from my interest in the ways art disciplines can function when they are linked to learning in other or related curriculum areas. The task was an arts-DE exploration, which I based on the following premises: *reality activation* principles of re-activating an incident of road trauma; *situated learning opportunities* involving peers interacting together within the classroom; and learning experiences involving *authentic instruction* where outcomes from the task were of intrinsic value in themselves and were relevant to the *real* world beyond the classroom. The Haiku task aimed to activate student responses towards sociocentric needs of others following two incidents of road trauma in which lives were lost. Other safety related benefits such as increased awareness of crash factors and consequences could emerge from such an arts activity as well. The task for students was to develop and convey messages of sympathy for two local families who had lost family members in recent fatal crashes, by expressing themselves through Haiku poetry.

I found the School A students (lower decile) took twice as long, and found the task harder to complete than School B students (higher decile) did. I had also noted that School A students were less likely to appreciate how an activity might be relevant for them if it was not directly linked to *driving*. Having no exemplar contributed to the difficulty of introducing this new activity to both schools. All students achieved a high standard of work but in School A I needed to become more directive and forceful and even withdrew my support for a recreation period at one stage, until they were able to achieve the outcomes at a level I was satisfied with.

This activity highlighted for me the critical debates teachers often have with themselves when teaching in situ. Should I have abandoned the activity earlier or did I have a responsibility to coax and cajole students to reach a level beyond their current comprehension, in line with Vygotsky's (1986) *zone of proximal development* already mentioned? By choosing the latter pathway and using a degree of coercion,

were students likely to be alienated against being involved with such an activity for the future?

I found the statement "*researchers agree that classroom instruction is inferior to most other methods*" (Lonero et al., 1995, p. 15) was unhelpful when I considered that increases in safety outcomes had often been dependent on the presence of other learning related factors in the implementations of a classroom DE programme. On face value, the statement could be true when referring to didactically based (lecture style) instructional delivery and the ability of this approach to produce "safer behaviours". However, in terms of encouraging learning and promoting safety, the statement indicated only that "at best, knowledge may be improved" (p. 15). It was possible that the statement reflected a degree of ignorance stemming from the statement that "few school-based safety programmes have been vigorously evaluated" (p. 15). As already explained, it was also likely that such implied evaluations would be concerned with summative outcomes for safety as I had found in other DE research reports, rather than embracing broader more holistic learning goals, which I had found were complementary to expressions of safer attitudes. An important attribute for me as the teacher, therefore, was to research my personal practice and challenge such statements for accuracy and precision in the hope that other ideas could be viewed.

8.5.3 Discussion – other issues

After two weeks into the first implementation, I felt that the most important attribute for me as a teacher was to adopt an "attitude or disposition of reflectiveness" (Newmann, 1990, p.46). Lazear (1991) outlines the uniqueness of this attribute:

> human creatures are the only ones that have this self-reflective ability...to step back from a situation in which they are involved and watch themselves...in self awareness lies the possibility of conscious change. We can observe our thinking patterns and actions in a given situation and learn from them. We can alter both our thinking patterns and our behaviour for greater effectiveness the next time we are in a similar situation (p.144).

Reflection offered me a clear view over the educational terrain I had covered and offered me a chance to review where I had come from and what pathway I might follow next. Because I had no collegial partner directly involved to assist me with my reflections, I developed a checklist for analysing teaching and learning in which I

identified three pedagogical elements of *teacher*, *content* and *students* (see Appendix K). Within the *teacher* element I discerned four teacher *roles*: the teacher as *manager*, the teacher as *a person*, the teacher as *a professional pedagogue* and the teacher as *a researcher*. From the perspective of each role and by reflecting systematically on events during each implementation, I could recognise and define functions of each role, which offered new insights into the scholarship of DE teaching and its research.

For instance I found that as the teacher:

- I needed *to take ownership for some events and incidents* that had occurred (I had been operating in an overly directive way);
- I talked and gave directions too much (concerned with questionnaires, permission sheets, organisation of diaries) and had not provided opportunities for students to work on the *Road Code*;
- I had required students to undertake too many tasks that relied on writing and reading which were tasks many students found difficult;
- I had underestimated the extent of student learning difficulties;
- I had underestimated the strength of peer culture and the level of resistance to new ideas (those who are forced against their will are of the same opinion still).

As a result, I negotiated alternative approaches with students and with the four teacher roles in mind, I found my practice and the classroom programme improved. In the following section I elaborate on the teacher roles and their functions and discuss teacher attributes that I found were important for teaching DE.

8.5.4 Teacher Roles

The four teacher roles are summarised in Figures 8.4 – 8.7. They included *manager* of curriculum content/activities, *the teacher as a person*, *the professional pedagogue*, and *the teacher as a researcher*. While defining these roles was an arbitrary or somewhat artificial exercise, I found it helpful as a lone researcher to examine each function in relation to my classroom practice. That way I could link improvements in student learning with changes to my teaching. I summarise next each teacher role and discuss the functions I performed during both implementations.

As a *programme manager* (see Figure 8.4), I prepared lessons, organised resources, arranged visits, developed ideas, photocopied tasks, and recorded student learning and monitored the programme direction. To begin, I sought ethical approval to undertake the research from the University, the host schools and from students. Then, using my pedagogical knowledge, I prepared resource materials for student

learning and gave students opportunities to communicate with me through their diaries and through personal conversations as I circulated about the class.

1. Manager of curriculum & activities	Tasks	Important points to consider
Programme content, structure & sequence; teaching/learning methods; activities, tasks, resources & media used; permission & authority cleared.	Develop activities, tasks; prepare resources; organise visits and visitors; arrange access to videos and other resources.	What do students need organised? Are there enough resources? Has permission (ethical considerations) been sought & approved?

Figure 8.4 Teacher Roles: 1. Manager of curriculum and activities

The scope of the *teacher as a person* role or personality (see Figure 8.5) was evolved from genetic, cultural, moral, political, gender, age and lifestyle factors beyond the immediate school. When students criticised me and what I was doing, I needed to communicate clearly who *I was* and *reassure* them what my goals for the programme were.

2. Teacher as a person	Tasks / Influences	Points to consider
Personality characteristics (resulting from genetic, cultural, moral, ethical, & gender factors including age).	To accept learners as they were and establish a meaningful rapport with them;	What attitudes prevail?
A knowledgable, wise, experienced, person (who has roles beyond the classroom).	A preparedness to understand student personal and learning and safety needs.	What student-teacher relationship is to be fostered?
Optimist (personal outlook & regard for student potential).	To show enthusiasm for students.	What goals can be achieved?
Communicator (being effective & able to provide formative insights for students).	To clarify feelings, ideas & to give formative and summative feedback.	What messages are being sent and received?
Being approachable (as a *confidante*).	To be available for assistance and help.	What ways enable students to ask for help?

Figure 8.5 Teacher Roles: 2. Teacher as a person

I defined my personal boundaries of work standards and behaviour as a part of this role and reassured them that I was fair, approachable and had their interests at heart. I maintained a cordial relationship by relating to them in a friendly but firm

way. I felt that it was also my responsibility to encourage and show enthusiasm for their efforts, quite apart from any DE content, even though at times this was difficult to confirm for some.

Students appreciated when I listened to them, clarified difficulties for them, and affirmed their efforts. They were less confident and needed more personal encouragement than other students, but eventually they became more positive once I understood their capabilities and limits and could use appropriate teaching strategies to give them confidence.

I found a tension existed within *the professional role of pedagogue* (see Figure 8.6). It related to the need for students to *learn* and to *be safe in traffic.* It was my contention that *to learn* and *to be safe in traffic* were complementary goals that were contained within a DE programme. But promoting *safety* without taking into consideration problems with *learning* was problematic as each factor relied on the other; one related to the *medium* and *methods* (how teaching and learning were facilitated) and the other concerned the *message* (about safety). This duality within the role was complex. It involved me in multi-tasking; simultaneously assessing and instructing, leading and following, being proactive and reactive, operating as teacher and researcher to establish an effective relationship with students.

3.The Professional Pedagogue	Tasks / Influences	Points to consider
Activator, motivator and negotiator.	Encourages student activity meets needs / potential.	What needs and impediments exist?
Guide and model.	Is a mentor and exponent.	What ways are best?
Experienced practitioner.	Selects from a known repertoire of strategies.	What is appropriate? (professional reading)
Assessor and monitor.	Seeks evidence of progress (formative & summative).	What evidence of progress?
Instructor, facilitator.	Delivers the programme.	What to do now or next?
Innovator and risk taker.	Applies knowledge to make new knowledge.	What could be improved?
Disciplinarian.	Provides boundaries for best learning environment.	What root causes or barriers can be identified?

Figure 8.6 Teacher Roles: 3. The professional pedagogue

Providing I maintained an honest teacher-student relationship, I could establish a positive classroom climate with mutual teaching-learning benefits accruing to both students and to me. In each implementation I was involved with these functions:

- As an *activator, motivator and negotiator* I probed for deeper meaning, encouraged students to do their best, cajoled them not to give up, inquired about their concerns, clarified the meanings of terms and ideas, and assisted students to overcome learning barriers in line with Vygotsky's (1986) 'zone of proximal development'.
- As a *guide,* I suggested ways to present materials and sometimes modelled activities for students (in line with social learning theory) giving them structure, schema, and plans for action so they could proceed with an activity knowing better what to do.
- As an *experienced practitioner* I negotiated some of the content with students (driver licence support) to better meet their personal needs. I provided more opportunities for group work to reduce the anxiety many had in front of large groups and acknowledged Maori cultural preference (Hamilton, 1989). This allowed me to circulate and assist learners individually and in groups where I could encourage leadership and team dynamics within the classroom. I selected from my repertoire of strategies the most appropriate teaching methods for students and the tasks required. I chose between closed and open learning tasks and introduced micro (local) and macro (global) perspectives of the driving task.
- As an *assessor and monitor,* I used formative and summative assessments of teaching and learning and student performance to assist students in their learning. I conceptualised a series of continua that helped me review student responses and analyse their level of progress.
- As an *instructor* and *facilitator,* I adjusted tasks and activities according to the circumstances, providing instructions, information and ideas and facilitated student actions and ideas where possible. I slowed the programme down at times; eliminated some activities (arts mediation, off campus visit) and changed delivery modes to meet their diverse needs. I found that repetition encouraged greater competence, which in turn instilled confidence.
- As an *innovator* I took calculated risks and tried new approaches and ideas. In keeping with good practice, I kept drawing on the professional experience and knowledge of others. I consulted recent educational literature and resources and considered the ideas and suggestions of critical friends. I consulted articles related to constructivism, situated learning, authentic instruction, school mix effect, disparate and differentiated learners which helped me modify my approach and activities. I redesigned several activities along *symbolic representational* lines using simulation and a three-dimensional model. I developed and introduced a kinaesthetically-based activity for licence and *Road Code* support and used haiku poems to intensify the reality of crashes and further mediate learning about crashes from the perspective of others. I simplified information for students by developing *reality activation* exercises, the *3DMDT* and the *T5CTS* to assist students gain an appreciation of concepts that they had not been able to understand before. I had hoped to establish a collaborative teacher-student relationship from which student initiated contributions might eventuate but I realised that the different perspectives held by students and me as the teacher about teaching and learning meant that such a relationship was not possible to establish.

Finally, in the role of *teacher as researcher* (see Figure 8.7), I considered two functions that operated together. First there was a *subjective internal* focus (more so

as teacher), which involved reflecting on my personal teaching practice in order to improve my pedagogical skills and professional practice for students. At the same time, a more *objective* and *broader external* focus was concerned with researching the development and implementation of this DE programme. This objective perspective had two functions; to manage the research as a case study using AR and to provide a narrative report of this study as educational research. The complexity of being a teacher as researcher resulted from the need to balance functions of being subjectively involved with professional issues in the classroom, and the need to retain a more objective stance when monitoring educational theory in practice and reporting it as a contribution towards academic scholarship.

4. Teacher as researcher *(Subjective / Objective stances: Participant action researcher).*	Tasks / Influences	Points to consider
Identify problems: students, teaching, programme DE.	Analysing and planning	How might problems be addressed? Outcomes?
Apply strategies: implement trial, and refine.	Put into action.	What methods appear to suit best?
Observe and collect data: observational, written, verbal.	Monitor and analyse data (consider objectivity & bias and triangulation).	What patterns are emerging? What are the implications?
Review: formative and summative outcomes.	Evaluate interim and terminal results.	What can be done differently or further?

Figure 8.7 Teacher Roles: 4. Teacher as researcher

Although teaching and researching occur together, I tried to retain a distinction between subjective and objective elements to record and report the research. I regarded my teacher thoughts and actions in the classroom as *foreground* events. At this *foreground* level, I made decisions concerning student learning by drawing on my teaching experience and knowledge of student-teacher interactions. Sometimes the strategies were successful and sometimes they were not. During the evening and away from the action in the classroom I assumed a *background* perspective reflecting more deeply on the lessons and the daily progress. From this exercise I gained a broader picture of the educational process by analysing responses more objectively than I could in the classroom. A *background* perspective gave me more time to make pedagogical connections with factors that could improve the teaching and learning.

I realised that my early assumptions had not been entirely accurate. A *foreground - background* perspective helped me to look more critically and objectively at what happened in practice and to ascertain what ideas arose from the

actions I had already taken. I re-evaluated what I was doing and what I was trying to achieve with support from my supervisors and critical friends:

- I altered my personal expectations of students and of myself and concentrated more on *student learning* than *teaching*;
- I was able to develop a more relevant and helpful approach to learning based on principles of constructivism and situated learning;
- I thought of alternative ways to assist students by considering physical constraints and regular patterns of student behaviours;
- I developed the *3DMDT* to help students learn more effectively by using three-dimensional symbols to represent abstract ideas;
- I found that the *3DMDT* also helped to address the problems resulting from high student levels of absenteeism; and
- I gained a wider picture of programme development and effectiveness.

I chose to report the study as a narrative account so that both quantitative and qualitative data could be reported together and the sequence of events and activities could be preserved as they occurred. I could also include samples of student responses and reactions they provided.

8.5.5 Reflections on teacher attributes.

Reflection helped me to define problems relating to students more easily and to take responsibility for some of the outcomes. I realigned areas of my teaching tasks using my pedagogical knowledge and experience of teaching. As a result of this restructuring, improvements could be seen almost immediately in student behaviour and effort.

In addition, I found support for the work I had done as the teacher in recent educational research on *disparate* or *mixed ability* students. Brown (1999) describes them as "classes of learners who generally display varied or diverse individual language and learning characteristics" (p. 4). To meet the challenges they bring, "a teacher may be faced with a wide range of planning considerations in order to meet the needs of every learner" (Brown, 1999, p. 4). I agreed with the statement that they, like transition students, were "a classroom reality and [were] a challenge to be addressed and solved rather than...a barrier to teaching and learning" (Brown, 1999, p. 7). As I emphasised earlier, "to teach effectively in a disparate classroom may require learning strategies first...[before] incorporating that knowledge into the classroom activities" (Quinn, 1997; in Brown, 1999, p. 16). Begg (1998) highlights the key role teachers play in the (curriculum) process. It is through them that

"curricula are mediated...in the classroom" (p.9). I had also gained a clearer picture of the factors that had contributed to effectiveness. These findings are described next.

8.6 Research Question Five: Factors that contributed to the effectiveness of the programme

I have outlined in each of the previous questions factors that were critical in practice; namely to do with content (Question One), the students (Question Two), teaching and learning (Question Three), and the role of teacher and researcher (Question Four). Therefore, in answer to this question, I provide a brief summary of factors contributing to effectiveness for each criterion, first, from a possible student perspective (based on responses they provided), then from my perspective as the teacher. Conclusions I reached about effectiveness are listed in the final chapter.

8.6.1 Validity of educational objectives (learning outcomes)

A majority of students made achievement gains by the end of the second implementation. Most feedback indicated that the activities planned for the DE programme concerning safety knowledge, skills and attitudes, were both enjoyable and helpful (see Appendix W). Positive affirmation could also be seen in written and verbal behaviours. Several noted that *reality activation* activities involving survivors were the most memorable because these visits "opened your eyes to what can happen" and one other student confirmed that "even though I have my licence I learnt new things".

From a teaching and researcher perspective however, validity needed to be considered in terms of whether learning outcomes were appropriate for student achievement within the classroom and for safety. Once I had adjusted and negotiated with students some of the learning outcomes and had altered the way I presented tasks, validity of learning outcomes improved. In particular, six students were able to sit and pass their restricted driver's licence. For a minority of students who were not prepared to commit to developing safer attitudes, however, concerns for validity arose for me and I envisaged I would have to work differently to increase validity for them.

8.6.2 Relevance of educational objectives

The achievement of learning outcomes was also linked with *relevance.* Relevance concerned both the safety outcomes I believed the students *needed* (teacher focus) and learning outcomes they *wanted* (student focus) to achieve.

As already described, I was forced to negotiate aspects of the curriculum with students to bring teacher and learner perspectives closer together. However, negotiation was not a question of me capitulating to the demands of students. I remained firmly of the opinion that unless students were acquainted with the horror associated with road trauma on a regular basis, many would continue to believe that danger happened to other people, or that it would not happen to them because they were always careful. I found that a safe and secure classroom environment coupled with the relative scarcity of any student having had first hand experience of a serious traffic accident or injury, tended to insulate them from the true impact and horror of road trauma. Their over-optimistic belief in their abilities to avoiding danger needed to be balanced by insights into crashes as deterrents for possible danger in the future.

I increased the relevance of the programme by including more content that was of immediate interest to them and developed new tasks and adjusted others to better suit their capabilities as learners. Therefore, greater programme effectiveness could be achieved when learning outcomes were *attainable* by students and *of interest* to them.

As indicated already, most students felt that the programme suited their capabilities and their interests, however, a few considered parts of it were boring.

8.6.3 Student variability

Exploring the nature of *student variability* and its impact on the DE programme has been a feature of this study relating to research Question Two. In simple terms I could increase effectiveness for lower achieving students by creating more opportunities for teacher-student contact and incorporating more strategies to reinforce learning. In the second year, I developed the *Pre-Driver Ed* text using a range of support materials that had captured students' interests in the previous year to increase student *interest* and their levels of *awareness* and *attainment* in the second implementation. A physical textbook resource with pictures, statistical tables and diagrams was helpful for students and was another way I could introduce abstract concepts to them that were necessary for a comprehensive understanding of traffic safety.

8.6.4 Content and structure of instruction

I maintained the *internal consistency* of content through a sequential programme structure. I used four phases that dealt with the *past, present, future* and the *application of knowledge.* They were translated into content *analysis, confirmation, synthesis* and *application of knowledge.* The only additional content that I included was a series of activities related to the *Road Code* introduced during the first implementation only. The four phase *TAKE FIVE* structure had proved to be consistent and effective during both years.

A course text that I developed for the second implementation was helpful for students and me as it represented a structure and a summary of the programme. With articles, pictures, and diagrams to refer to, there was less resistance from students.

8.6.5 Instructional processes

As one of the important foci for this research detailed in responses to Research Question Three, my exploration of instructional processes revealed that the learning and safety needs of transition students were more diverse than mainstream adolescents. They benefitted from having direct teacher-student contact, tasks that were designed for group work and presentations that were supported by visual, kinaesthetic and tangible resources. A three dimensional model, using symbolic representations of abstract concepts, was helpful in conveying messages of safety and providing comprehensive overviews of traffic issues.

8.6.6 Acceptability of a programme by teachers and students

Effectiveness of a DE programme can also be dependent on its acceptance by other teachers, students and members of the community. In relation to this study, I found that the effectiveness of the programme was reduced by the following factors:

DE suffered from a lack of status and an accompanying sense of value when:

- groups of academic students were excluded from it;
- it was associated with transition education students only;
- it was not regarded as an academic subject;
- it was not able to provide practical driving activities in keeping with its title;
- more academically inclined students regarded it as a course for "dummies" (slow learners).

The effectiveness that I had found from the implementation of the programme had not been fully recognised by other teachers and students because I had not made

the learning outcomes sufficiently obvious to them. However, it was obvious to me, and to other teachers who visited the class in the second year, that many of the students in the class were achieving at levels higher than had been expected. I found that when some teachers approached the DE teacher to ask that students be excused from class, either to help them, help another teacher, to prepare a hall for a ball, or to attend a Maori studies test in DE class time, an impression was conveyed that the DE class was not as important and that another student's absence was not going to matter much.

From a DE teacher perspective, positive acceptance was shown by the DETs in each school, especially when I was able to deliver the programme the next year in a shorter duration (29 hours in School A and 14 hours in School B).

8.6.7 Reflections on factors contributing to effectiveness

I had found that the level of effectiveness for students resulted from a teaching-learning process involving students interacting with DE content and activities to keep them safer at a level appropriate for the students concerned. This study explored each of these areas in detail and in particular those areas that have seldom been explored before: what students were like and how that affected the programme; the educational process that was involved; and what attributes of the teacher were important for effectiveness.

I found, as Cameron and Macdonald (1973) note that a DE programme can be effective in improving a pupil's knowledge of traffic regulations and other 'cognitive' aspects. However, for students who did not acknowledge the dangers associated with risk-taking, the programme remained ineffective. Safety benefits were conditional upon a preparedness of students to embrace activities and messages promoting safety. When students admitted that they would continue to drive without a licence and would continue with risky practices in the future, then I had to accept that this programme (or any other programme like it) would continue to be of limited value for them. On an optimistic note, there was always the hope that the next time such students were introduced to safety ideas, it was possible they might be more open-minded or may have assimilated a foundation during this course on which greater personal safety might be built in the future.

8.7 Closing note on effectiveness

I was encouraged by a summative assessments given by the students who had completed the programme after each implementation, in spite of the difficulties I had faced from individuals who were reluctant to change their stance on safety. Remembering that the DE students are the primary focus of such a programme, I was encouraged by their collective responses which showed that only two students from a total of 18 replied that the course was either "bad" or "sometimes boring" and there were two nil responses. A few others had found it found it "ok"; "alright" or "not bad" but the majority of students found the programme "very different'; "helpful"; "very interesting" and "just right as it is".

In the next and final chapter I make suggestions for policy and further research and summarise the conclusions I reached.

Chapter 9: Conclusions

9.1. Introduction

In this Chapter I report conclusions reached from developing and implementing a DE programme in two secondary schools. I evaluate the use of action research and narrative within the study, noting strengths and weaknesses. I then discuss contributions the study makes to the scholarship of DE before considering suggestions for further research and the provision of DE in the future.

I became aware of several gaps, limitations and assumptions about effective DE programmes and wondered what contribution a classroom-based DE programme might have to make. I reviewed existing programmes and road safety resources before constructing what I envisaged would be an appropriate programme for adolescents called *TAKE FIVE - STAY ALIVE.* I focussed largely on the outcomes of crashes to heighten student awareness about dangers associated with traffic because it was my understanding that topics connected with *driving* in a physical sense or the *acquisition of a driving licence* were sufficiently catered for in DE programmes conducted in the first two semesters in each school.

I developed five research questions to help me address the limitations I found in existing programmes. These have become the basis for my reporting of each implementation and my conclusions from the study. Having confirmed a structure, DE lesson content and sets of activities, implementations occurred in two schools. However, although I used AR in the research, I was unable to engage students as co-participants as too few students understood the relevance of such an exercise for them.

In spite of previous teaching experience and thorough preparation, within three weeks of the programme operating, I learned that the programme content and the way I was teaching it did not provide the quality learning experiences for students in the way I had envisaged. More was required beyond appropriate DE content for progress to be made with students. I reviewed teacher roles in the learning process and adjusted tasks to be more appropriate for students who had learning difficulties. In the sections to follow, I report on the conclusions I reached for each research question.

9.2. Conclusions

Because the process of developing and implementing a DE programme was more complex than I had anticipated, I made a number of adjustments which I summarise next.

9.2.1. *Research Question 1: What knowledge, skills and attitudes were necessary for adolescents to be safe on the road?*

I confirmed that most existing DE programmes had content that was appropriate and valid for adolescent safety. However, I concluded that the issues of courtesy and abuse were addressed inadequately, if mentioned at all. I found many students were unsure of the safest options to take when traffic situations involved courtesy or abuse, when compared with other safety topics like speed, alcohol, and the wearing of seatbelts. This was in spite of me giving greater weight to courtesy and abuse within the *TAKE FIVE* programme. Students were also more likely to advocate risky decision-making when responding to traffic situations, like whether to contravene licence regulations, to help a friend or to censure a friend for dangerous acts. These patterns suggested to me that abuse and courtesy deserved a higher public profile similar to that afforded to speed, alcohol, and the wearing of seatbelts. A higher profile might give students an information base to call upon when making decisions in a traffic environment.

My greatest concern regarding DE content was a lack of reference made to adapting DE content to the needs and abilities of students. Little constructive guidance was offered to teachers about the type of DE content that was appropriate for students, in particular, those who were slower at learning. In the first implementation, had I not negotiated the inclusion of driver licence support, further withdrawal of student interest in safety topics and an escalation of behavioural problems would have occurred.

One factor linked to programme content was the egocentric focus many students showed. Student concern for others was often subordinated to the concerns they had for themselves. It had become clear to me by the end of the first implementation that the inclusion of sociocentric topics, such as courtesy, in a DE programme did not mean that messages were accepted by students.

9.2.2. *Research Question 2: What features of being an adolescent need to be considered in a DE programme?*

There was little acknowledgment in DE resources of the need to cater for differentiated populations of adolescents and how the characteristics of particular groups might impact on the implementation of a DE programme. Furthermore, there seemed to be an assumption that a prepared programme delivered to a DE class of adolescents would result in the achievement of safety outcomes.

While transition students appeared physically similar to mainstream adolescents they had greater difficulties with learning. Therefore, heterogeneity needed to be acknowledged as an important factor in task design and learning. Before I could confirm that learning had occurred, I had to use my teacher knowledge and select resources and learning approaches that best suited the interests and abilities of students. I had to be well acquainted with their learning needs and abilities to begin with so that I could know how best to amend and adapt lesson materials for their personal needs. While consistencies between each context did exist there were some quite marked differences in what students found easy, challenging, uninteresting or exciting.

Many impediments or barriers to learning stemmed from difficulties with reading, comprehension and recall. These were compounded by influences from home and peers that were problematic. I found that students with lower levels of personal confidence and abilities in schoolwork were often the ones to report higher levels of risk acceptance. Difficulties students had with classwork were also frequently accompanied by high levels of procrastination, distraction, and resistance to tasks. As a result, these students needed to be affirmed more, sought more approval from me and frequently showed a greater propensity for optimism bias, errors of attribution and faulty logic (misconceptions) in their diary reports.

By contrast, responses from students in the higher decile school revealed higher levels of compliance with safety practice and traffic regulation. Fewer of them had difficulties with learning and more would contribute to class discussions, showing personal confidence and independent learning skills. They were more able to understand abstract concepts and were more socio-centrically focussed.

9.2.3. *Research Question 3: What learning theories and associated teaching methods could assist in the development and implementation of a DE programme?*

I found students were more likely to understand the implications from the consequences of crashes when I used a behavioural learning approach that I called reality activation. I could engage most students in role-plays or imaginative reports from the perspectives of survivors by reactivating the circumstances of selected crash scenarios as negative reinforcement within the classroom. I also had to acknowledge that there were several students for whom this method was not necessarily helpful. Many of them had other learning needs to be met first before safety outcomes were likely. The use of symbols, to represent factors in a traffic environment, on a three-dimensional model of the driving task enabled students, who had been previously unaware of these factors, to appreciate their road-user responsibilities better.

For those students for whom risky practices remained viable, I used a constructivist approach that encouraged them to build up statistical patterns of deaths and injuries in ways that were more meaningful for them. Data they collected and had personally analysed became the data to challenge their attitudes towards safety.

I concluded that three factors, (other than the contribution of the teacher outlined next) had assisted students to appreciate safety more. First, a *PDE Text* defined the boundaries of the programme and provided tasks to support learning and safety needs. Second, daily crash analysis and vocabulary exercises linked to the *PDE Text* enabled students to develop greater confidence and independence by giving them opportunities to reach conclusions about problems themselves. Third, students could appreciate the scope of road-user responsibilities and causes of crashes through the three dimensional model of the driving task.

Positive learning outcomes emerged from activities that were based on the use of cognitive and social learning theories as well. Experienced drivers were interviewed in the classroom to broaden students' understanding of positive driver behaviours. Their support for better and safer driving through anecdotal references to courtesy and suggestions for reducing involvement in crashes was specifically mentioned by many of the novice drivers. The development and fine tuning of many of these tasks, however, relied on teacher skills to maximise their effectiveness. The teacher contribution is outlined next.

9.2.4. *Research Question 4: What teacher attributes were important for the delivery of DE in the classroom?*

I described four teacher roles in Chapters Five and Eight. In the *teacher as researcher* role I could look more objectively at the research through reflection. The checklist of teaching and learning (Appendix K) helped me to reflect systematically as a lone teacher-researcher on a) the programme, its content, structure and activities, b) the students, their different needs and abilities, and c) and my contribution through four teacher roles: as an educational manager, a person, a professional pedagogue and a researcher.

I gained a better appreciation of:

a) the processes involved in learning for students with special learning needs;

b) the learning skills that required more emphasis;

c) the type of activity and approach that resulted in safety outcomes being achieved;

d) how formative assessments could assist student learning; and

e) how to manage a range of contingencies that arose from time to time in the classroom.

Self-reflection coupled with my personal narratives of lessons and student responses allowed me to review teaching and learning factors more dispassionately, in particular, lesson content and the acceptability, appropriateness and effectiveness of tasks and activities. While I had found it a struggle to balance the four teacher roles early on, I found that by systematically stepping back from the classroom during the evenings and reflecting on the teaching and learning that had occurred that day, I could better appreciate the broader picture of events and the factors that had contributed to them. As my confidence and knowledge grew, I was better able to select teaching strategies that could optimise teaching-learning moments with students. I was more prepared to accept responsibility for events that were both successful and unsuccessful and became more adept at applying my professional knowledge and skill to overcome problems that arose without warning. My overall approach also changed from seeking personal success in the first implementation to one of assisting students to improve their learning in the second. The second implementation was much easier as a result.

9.2.5. Research Question 5: What factors influence the effectiveness of a DE programme?

Most of the factors influencing effectiveness have been highlighted in the previous research questions. To summarise these factors, however, I consider content validity, relevance for students, relevance for the teacher, the nature and structure of instruction, the characteristics of the learner, and the teaching-learning process.

The validity of DE content for promoting safety was in part confirmed by my choice of topics that had parallels in existing DE resources and determining whether students safety needs could be achieved within a classroom context. I considered relevance from the dual perspective of the students and the teacher. Most students affirmed that programme content was relevant by reporting that they had found it interesting. I increased relevance for them by negotiating content that was of greater interest to them and at a level that they could attain more easily. Attainability was mostly dependent on my ability to match tasks to the ability levels and capacities of students. Relevance also needed to relate to student needs rather than wants. Where I could acknowledge student wants and needs together within my planned learning goals, outcomes were more likely to be achieved. If students were unable to perceive value of an activity for them, I had to accept that the exercise would cease to be effective until I had made further changes.

The DE students appreciated a greater emphasis on concrete and tangible programme materials. Physical tasks like a driver-simulation exercise allowed students to benefit from practising being drivers without having to worry about the dangers associated with being on the road.

The structure of instruction, involving the four phases of analysis, pattern confirmation, synthesis and application, was consistent yet flexible enough to allow for changes to be incorporated as the programme continued. Students built up new knowledge, skills and attitudes through tasks that drew on behavioural, cognitive and constructivist learning theories.

My accumulated knowledge of the students and assessment techniques enabled me to select learning outcomes that were achievable for students. I found a consistent level of success from the development and use of reality activation activities, the *3DMDT*, the *PDE Text*, new vocabulary and crash analysis exercises with students. More progress occurred from one implementation to the next but effectiveness was

limited for students who were not prepared to change their ideas about safety and the placement of DE in schools within a curriculum band that restricted those who could access the programme.

I concluded that the following factors were necessary for effectiveness: DE content that was valid and relevant for the interests and needs of students; teaching strategies that used a range of media; and a teaching-learning environment where meaningful interactions between students and the teacher could occur. I found insufficient attention had been given to the roles of teacher and how students acted and reacted within a classroom in the past. *Summative* outcomes, which appeared to be the predominant method for determining effectiveness in the past, have only provided part of an insight into effectiveness. Formative assessments of student work provided more data for teachers to use to increase the effectiveness of teaching and learning.

9.3. The use of Action Research and the Narrative

My previous practical experience with AR, to improve the professional practice of tutors in a Music Centre (Bruce, 1992), involved colleagues collaboratively developing a shared vision of change that was a powerful and empowering exercise. This experience motivated me to use AR in this study. However, as already reported, I found that collaboration with students was not possible because of the differences in teachers' and students' outlooks and understandings about safety and teaching and learning. As a consequence I adopted a more directive teacher style, which the students expected of me. This met their needs for greater security and learning support. From an AR perspective, I turned my attention more towards a *teacher as researcher* role as *a lone researcher*, a role that has received greater affirmation in recent years (Bunning, 1995; Dadds 1995; Merriam & Simpson, 1995). AR offers solo teacher-researchers a systematic approach to introducing innovation in teaching and learning by "putting the teacher in the dual role of producer of educational theory, and user of that theory" (Riding, Fowell & Levy, 2000 [on line]).

9.3.1. *Strengths and weaknesses*

I limited the overall scope of the *TAKE FIVE* programme to content that could help students become more aware of factors contributing to crashes. I did not include driver licence content although it could be included when required. I confirmed that it

was possible for students to achieve higher levels of safety without increasing their exposure to traffic (RTSRC, 1994).

The absence of a collaborative partner did not hinder my ability as a teacher to apply AR methods in the classroom. While I acknowledge the strength of participatory AR, where a collaborative culture could not be cultivated, the next best option was to use other sources of data for triangulation, validity and rigour. Using student feedback, observations from other teachers and my assessments of student work as confirmation, I acknowledged that AR helped me as a lone researcher to make improvements to my practice as a DE teacher and to assist students with their learning. I noted other strengths of AR as well.

As an *emergent* methodology where "method and data and interpretation and action develop simultaneously, and from cycle to cycle" Dick (1999, on line) AR allowed me to take account of unpredictable circumstances and events in the first weeks. The iterative nature of AR and its cyclical structure of observation, reflection, planning and action helped me to address the unpredictability of classroom life over the duration of each implementation and introduce changes to DE content my approach to teaching and my interactions with students.

I found AR was suitable for use in a natural classroom context. I could take account of contextual difference, variation in student abilities, gender mix, behavioural problems, different programme durations and I could vary my interactions in keeping with students' needs. I continued to work with students who found learning difficult or did not show shifts or modifications in their ideas.

The systematic structure helped me to link theory and practice together. As I worked within each classroom I could draw on existing theory and generate new theory while involved in action (Beattie, 1995). With greater experience I could respond to awkward situations immediately and preserve the flow of lesson content, the direction and rate of progress with a minimum of interruption.

I found that AR was suitable for a longitudinal multi-case study. Student perspectives on safety were not clear to me at the beginning of each implementation. However, once students had received support for their learning using a range of activities and teaching-learning strategies I observed most students made subtle improvements in their attitudes and achievement throughout each implementation.

The use of narrative was complementary to my use of AR and most suitable for reporting this case study. Each narrated event represented a relief map of the educational terrain I had covered and included my records of planning, action, observations, analysis and reflection. Each diary record contained personal descriptions of contextual difference and preserved in detail rich descriptions of events, observations and responses of students. I included student thoughts and ideas from their diaries and made formative assessments of them which helped me further refine the programme as I went. The sequential flow of actions, reactions and events recorded in my researcher diary became the primary source for the larger narrative. The daily discipline of writing kept me to my research agenda even though it was sometimes difficult to maintain a high level of researcher intensity. Diary entries of important events and actions could be analysed and evaluated retrospectively.

I found it an advantage to be engaged simultaneously as a teacher and researcher in the classroom. As my principal interest, as a DET, was in the improvement of safety outcomes for students, as a teacher-researcher I could simultaneously act and reflect on learning tasks for appropriateness and relevance. The goal to improve the level of safety for students could not be achieved without researching what learning practices and strategies were relevant and appropriate beforehand. Therefore, AR helped me to retain a more objective perspective on what I was doing and challenged me to be more accountable for the adjustments that I proposed for the programme and delivery of it for individuals and classes.

As mentioned, I found it was difficult to establish an interactive and collaborative partnership with most students. Several were frequently absent, had difficulty with learning tasks and many were not able to embrace a global outlook broader than driving a car. As a result, I had to find other ways to encourage these students to take personal responsibility for pursuing greater safety. My use of AR to achieve this was less of a mechanism for participation but more of a structure for reflective praxis where I could incorporate changes as the action proceeded.

One difficulty beyond my control was a need to maintain comprehensive data sets when students were absent frequently. Student responses were more numerous at the beginning of each implementation than they were towards the end and results needed to be considered in the light of omissions caused by students not completing the programme.

A further difficulty for me as a lone researcher was to be totally objective about what I was reporting. I missed out on opportunities to have professional discussions with colleagues or collaborative partners. Under these circumstances it was possible my beliefs and conceptions coloured my interpretations and caused me to overlook personal bias and fail to account for omissions and errors in judgement. It was in my professional interests to declare all findings whether the results were supportive of the programme and my teaching or not. Therefore, to overcome this likelihood, I developed and used the teaching-learning checklist, student records and sometimes visiting teachers and critical friends as independent sources for feedback.

A positive outcome to emerge for me was a realisation that lesson failure was not necessarily a reflection of my ability as a teacher or my value as a person. In School A, the declining interest shown by students in the first few weeks eventually represented for me not an end but a beginning as I turned my focus more towards students, and sought to make improvements to the programme, and my delivery of it.

A final characteristic worthy of note is the limited potential for AR to be generalised to other contexts. What AR loses in being generalised to different contexts is made up for by the relevance the research has for local situations (Dick, 1997). In this case, however, while being context and locally bound, the research could offer some generalisability for DE teachers and researchers by providing ideas on how the effectiveness of a classroom-based DE programme might be improved.

9.4. Contributions to knowledge

The genesis of this research arose from an adolescent contravening a number of traffic regulations and dying as a consequence. This event led me to develop and trial the *TAKE FIVE* programme so that I could answer questions that arose from a lack of classroom-based DE research. Through a number of questions I explore the contribution the research makes to knowledge about DE and I raise issues that are also relevant for DE research.

- *Is a classroom-based DE effective at reducing crash statistics for adolescents?*

Although it might seem logical for a DE programme to make some contribution towards reducing adolescent injuries and deaths from crashes, there is little possibility of establishing a direct link between a classroom-based DE programme and the traffic environment because of the number of non traffic-related variables that exist and

cannot be controlled. Similarly, goals designed to be achieved in a classroom are not necessarily capable of being transferred to the wider traffic environment. However, a classroom DE programme can assist students to become more aware of danger and options that can keep them safer.

- *What student factors are important for a DE programme to be effective?*

This study highlighted the heterogeneity of adolescents and brought into sharp focus student differentiation of subgroups within schools. I found the learning needs of DE students were more complex than has been described in DE research before. As a result, there are important implications for the design and delivery of a classroom DE programme and the functions of a DE teacher. A DE programme that failed to take account of the extra learning support DE students needed to assimilate safety messages, was likely to result in a loss of effectiveness. This study gave voice to DE students and recognised their contribution to the education process. Their feedback enabled me as the teacher to tailor activities and content to be more effective for them.

- *What has the implementation process highlighted?*

This study reported the complexity of the teaching-learning process and outlined the factors that could improve programme effectiveness. In particular, it dispelled any notion that the content of a DE programme was sufficient in itself for safety as an outcome to be confirmed. Instead, the study highlighted: the need for students to be receptive to safety ideas; the need for a teacher to respond to student learning and safety needs; the need for a teacher to draw on pedagogical skill and experience to develop and amend tasks and activities to be appropriate for student abilities; and the need for activities to encourage students to process data themselves. Without these components being present, acting and interacting together, a DE programme would not be effective.

- *What type of assessment is of most value?*

Summative assessment of a programme is limited in what it can offer to improve the effectiveness of the educational process for students. Instead, this study utilised many forms of formative assessment, which assisted students to take greater responsibility for personal knowledge development through tasks largely based on constructivist principles. Formative assessments also assisted me to make changes to activities, to

content and to my approach to teaching so that I could help students achieve the learning outcomes that they were capable of. A summative assessment of the programme was helpful, though, for planning future implementations.

- *What value does a classroom-based DE programme have?*

Students acknowledged the safety benefits they gained from the *TAKE FIVE* DE programme were: better ways of thinking; safety precautions; what to expect when driving; an awareness of factors that contribute to crashes; and an understanding of the consequences of crashes and outcomes from risk-taking behaviours (mixing alcohol with driving, speeding). Most students enjoyed the programme and several mentioned that it was very different, enjoyable and interesting. While it was valuable to have positive feedback from students to indicate the value the programme had for them, the programme was valuable for me as a researcher by highlighting ways DE programmes can falter, and what can be done to make improvements and increase student achievement. A valuable outcome, not referred to in DE research, was the improvement in learning skills that were achieved by most students. Therefore, to assess a programme's value solely in terms of safety outcomes appeared to overlook the importance of developing a holistic approach to teaching and learning, which I found was necessary before some students could attain safety outcomes in the first place. As already noted it was possible to "focus on driver improvement rather than increasing exposure (to traffic)"(RTSRC, 1994, p.11) through a classroom-based DE programme.

- *What is involved in developing a DE curriculum?*

The development of DE content is only one component in a DE curriculum. I found that a vital part of the development process was a need to pilot the programme using students of the calibre it was developed for. During a trial process tasks and activities were thoroughly monitored and adjusted for appropriateness and relevance for students. This trial process also presumes that teachers have accurate knowledge about the students beforehand to enhance the learning opportunities for them.

- *How important is this research for DE?*

This study has provided an in-depth longtitudinal multi-case study of the development and implementation of a curriculum for DE. It addressed the lack of empirical research related to classroom DE programmes (Rothengatter, 1994),

described the roles of a teacher and teacher strategies that are required for a programme to be implemented (Horneman, 1993) and identified the learning outcomes (behavioural objectives) that can be expected from students from a classroom-based DE programme (Horneman, 1993). In addition, I confirmed the effectiveness of original activities developed to meet the specific needs of students. In spite of a lack of generalisability, the study does offer teachers and DE researchers authentic insights into the processes of programme development and implementation that may be of some help in their own local situations.

- *What has been learnt about Action Research?*

I explored the teacher as researcher model of AR by taking the role of a *lone researcher* (solo researcher). I found that I could improve the effectiveness of my teaching, the activities in the *TAKE FIVE* programme and student learning without a collaborative partner, by using a checklist of teaching and learning and triangulating a range of qualitative and quantitative data to increase programme effectiveness. The T/R is recognised as "the most effective person to identify problems and to find solutions" (Riding, Fowell & Levy, 2000, on line) in the research process. For me, AR was an appropriate methodology for curriculum development and the assessment of DE activities using mini-AR cycles. The use of narrative illuminated the AR process through records of actions, reflection on actions and changes made over time. I gained valuable insights into teaching and learning through AR that I had been unable to find in other positivist DE research. AR was an appropriate methodology for use in the classroom and provided an alternative approach to DE research by using mainly qualitative data and formative assessments of teaching and learning.

9.5. Looking ahead – Policy suggestions

I offer the following policy suggestions in light of a statement made by the RTSRC (1994), that "it should be possible to produce some national guidelines for training/education programmes and how they should be taught" (p.11) once a pilot programme in DE had been completed.

1. *Change the term* Driver Education *to* Traffic Safety Education *or* Advanced Traffic Skills.

The term *driver education* is too ambiguous. Most school-based DE programmes in New Zealand do not involve driving. A more consistent and inclusive term is required for DE programmes in schools, considering most students in the

study had limited knowledge about: a) their extreme risk of injury or death as passengers; b) their disproportionate over-representation in traffic statistics; c) the rights and responsibilities of other road-users; and d) traffic safety issues beyond the driving task. Alternative terms need to acknowledge that adolescents should be better informed about these issues. '*Traffic Safety Education*' or '*Advanced Traffic Skills*' are more inclusive terms that allow for a broader range of topics relevant to adolescents and their safety in traffic situations to be covered. They also acknowledge Best and Edward's (1982a) observation that *traffic education* was "an aspect of the socialisation process increasing awareness of social responsibilities" (p. 15) rather than an educational product.

2. *Ensure all secondary students receive consistent and on-going* Traffic Safety Education.

Too many secondary school students miss out on DE programmes in schools, which limits the effectiveness DE can have for adolescents as a whole. DE is frequently regarded as a low status subject because of its link with transition education classes. A more effective strategy would be to ensure that compulsory coverage of safety issues (traffic and related fields) occurs for all students throughout secondary education years even though transition students are more likely than higher achieving students to continue to take unnecessary risks.

This could be accomplished in conjunction with traffic and other safety agencies (dealing with safety strategies for bush, fire, water, boating, substance abuse, solar energy, electricity, civil emergencies and occupational safety and health) through a consistent presence in other curriculum areas much in the way I had done in this study. Preparation of traffic curriculum units could involve traffic personnel, specialist and generalist teachers, to ensure that units are integrated and trialled by trained teachers at various levels in *all* curriculum areas. Prepared units would be integrated within existing curricula rather than adding additional safety subjects to an already over-crowded curriculum. All students would then contribute to the development of a consistent regional and national "safety culture" (EWRC, 1993).

3. *Recognise the gaining of a licence as a community achievement or qualification.*

Gaining a driving licence deserves greater community recognition and official acknowledgment. A formal graduation would not only act as a *rite of passage* but would involve school and community in reinforcing messages of safety. A ceremony

would also help promote idea that gaining a licence is a personal qualification that represents a driver's need and commitment to take greater responsibility for the safety of self and others. It would also symbolise a transfer of knowledge and social responsibilities from older generations to younger generations.

4. ***Driver Courtesy, Violence and Abuse, and Passenger Rights need a higher profile.***

For safety messages to be more empowering, *courtesy, violence* and *abuse* and *passenger rights* need a higher national profile. These topics could be complemented by the application of a simple philosophy, "it is the duty of everybody to do their best" in the traffic environment (not necessarily for personal benefit but for all road-users as in a *team* concept). This philosophy could counteract the pressure to take unnecessary risks and improve the safety threshold in the wider community.

9.6. Further research.

This study has made a contribution to DE by providing insights into teaching using anecdotal records of actions, reactions and outcomes. I could not pursue a number of areas in the study at the depth I would have liked because of the breadth of the study, the difficulties I had with students and a lack of experienced personnel to assist me with the research. Further research would help to address these and other areas listed next. In terms of classroom-based DE programmes I could see the potential for:

- The study to be repeated by another researcher using schools with different decile levels. This could be expanded to include a wider research and teaching team. Having collaborative colleagues would increase the validity and reliability of data collection and analysis through an increased data pool and quality of data. They could also provide a critical dimension that I lacked on my own, could make suggestions about process, could give new insights into DE implementation and challenge conclusions reached in this study.
- Further research on activities in a DE classroom programme. I had found transition students responded more to activities involving visual and tactile elements and DETs would benefit from this knowledge. There was scope to develop new ideas and consider how computer technology might be introduced. There was potential to develop interactive tasks on CD rom, exercises in drill and practice, and to construct databases and graphs of traffic related factors.

In terms of the students, it was clear that in lower decile environments, students were more likely to be *at risk* through higher levels of reported risk-taking. They were more egocentrically focussed and more frequently displayed errors of attribution in their work. To compensate for their needs, wants, beliefs, preferred learning methods and attitudes within a programme, more research was required that could explore:

- How lower decile students might be encouraged to acknowledge their positive worth and as a part of this process, recognise that they are capable of improving their understanding and capabilities. Linked to this research could be the development of techniques and strategies to assist them to make wise decisions. Tasks could involve comparative studies of utilities and disutilities of speeding, alcohol and drug use in traffic and the development of more sociocentric perspectives. The celebration of gaining a licence could involve the community to reinforce the attainment of a safety standard that recognises increased skill, knowledge, responsibilities and opportunities.
- Partnerships with other student research such as cohort studies in accident and injury prevention and youth development. Such research might establish links with other risky pursuits and help to broaden approaches to safety.
- How the programme could be adapted for use with more able groups of students under the auspices of other *language arts*, *social studies*, or *health and physical education* departments rather than transition education departments. Exemplars could be developed for use with lower achieving students.

From the perspective of the teacher, accounts from transition students relating to the success of tasks and activities were possibly the most valuable outcomes from DE research, given a teacher's existing teacher knowledge. It had been essential to trial activities in a classroom, therefore, I could see that further classroom research might explore:

- The development of new tasks, based on particular theories of learning and specifically designed for particular students or groups,
- Further sets of statistical resources for use with student analyses of crashes and surveys,

- Additional survivor case studies through the use of interview, internet, audio and video documentaries, and
- An acknowledgment of specific learning theories that could be helpful in the development of the suggestions above.

In terms of DE research, there were other ideas to consider. I could see that with recent reports of young drivers illegally drag racing and performing burnouts on urban and rural streets, there was a need for research that might involve these groups in partnerships with local councils and regional authorities to find alternative approaches to such problems. It seems that an understandable but confrontational approach from concerned citizens often results in an escalation of the problem rather than a reduction of it. Negotiation and partnerships were likely to be more helpful for both parties concerned.

There were also some cultural patterns that existed in the approaches of some students to safety. Maori students were over-represented in contraventions of licensing regulations. However, mandatory licence carriage regulations introduced in 1999 may have contributed to an improvement in this area but room existed for stronger partnerships to be built between community and *at risk* groups. Some possible research projects could include:

- Longitudinal studies of students identified as *at risk* in the classroom and their patterns of safety beyond the classroom would be helpful in developing more effective safety strategies that could involve employers, authorities and community groups.
- Programme development to support at risk populations that is acceptable to particular cultural groups.
- Further inductive and naturalist approaches to DE programme research, using quantitative and qualitative data and formative assessments to improve the quality of learning.
- The use of arts, such as visual art, poetry, and drama to promote social messages. Transition students in School A had more difficulty transferring safety messages into art forms (posters, poems and songs). The development of exemplars would be helpful for such students by broadening their appreciation of parameters connected with symbolism, artistic expression and communication.

This research provides an invitation to other researchers to continue developing longitudinal studies of this type and to provide authentic insights into teaching and learning for adolescents. These studies are likely to continue to develop knowledge about tasks and strategies that can lead to more enjoyable, successful, and effective activities for adolescents who remain the most vulnerable group of road users.

9.7. Closing Note.

This study has effectively highlighted the importance of the teacher as a primary agent for facilitating learning. It has also highlighted the need for DE activities to be appropriate for the capabilities of the students and their preferred learning styles. From an educational perspective, the study has also highlighted the importance of two critical elements: knowing the students and knowing how student capabilities can impact on the effectiveness of a DE programme. Unless transition students are guided in a DE programme to reduce risk-taking and danger without duress, their behaviour is likely to be mirrored in the statement "those who are forced against their will are of the same opinion still". As a result of this study I could appreciate the wisdom behind an Aleut Indian saying, "before I can teach you, I must know you first".

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Appendices

Appendix A: Driver Licence Survey - March 1996

Driver Licence Survey - March 1996

1 My age is I am a Female b Male

2 I am in the form. Ethnic Background or Country of Origin
Maori / Polynesian / European / Asian / other

3 I have lived in New Zealand since 19___ .

4.1.a **LICENCE STATUS**
EITHER - **I have a Driver's Licence**
Which type? i learner, ii restricted, iii full

4.1.b What reasons have made you want to get your licence? - describe...

4.1.c Who taught you to drive?

i Driving instructor ii parent iii family friend iv personal friend v other

4.2.a. **NO LICENCE STATUS**
OR **I do not have a Drivers Licence yet.**
4.2.b Do you want to get your licence? i Yes ii No

4.2.c. Give reasons for answering yes or no.

4.2.d. What reasons do you have for not having a licence yet? - describe...

4.2.e. Who will teach you to drive?
i Driving instructor ii parent iii family friend iv personal friend v other

5 Do you drive a vehicle without a licence? a Yes b No
5.a.i If yes, why is that?

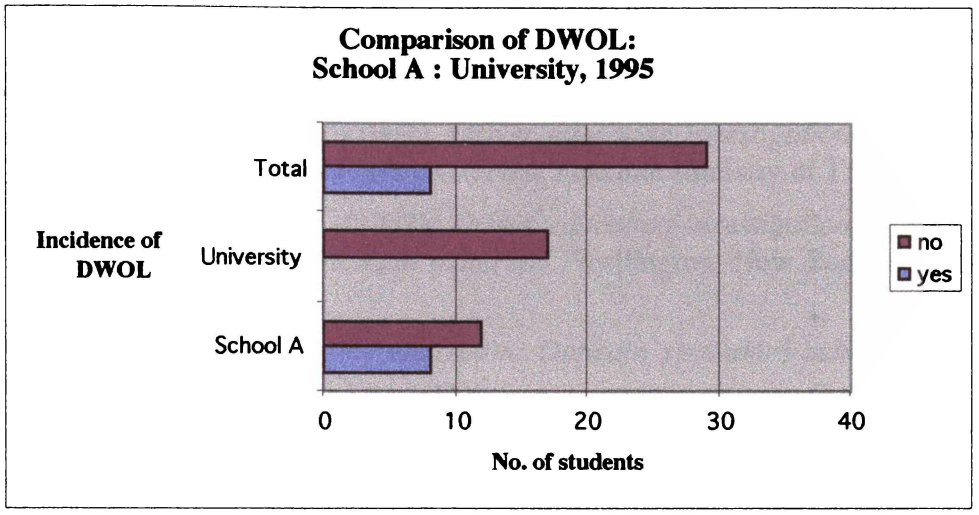
6. a Please show below people you know who drive without a licence?

i parent ii family friend iii personal friend iv relation v other

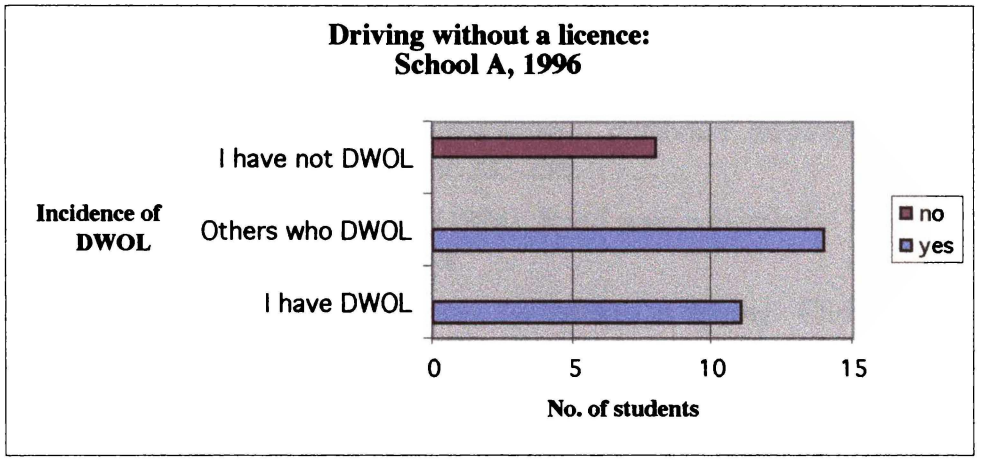
7 If you know why such drivers drive without a licence, give reasons .

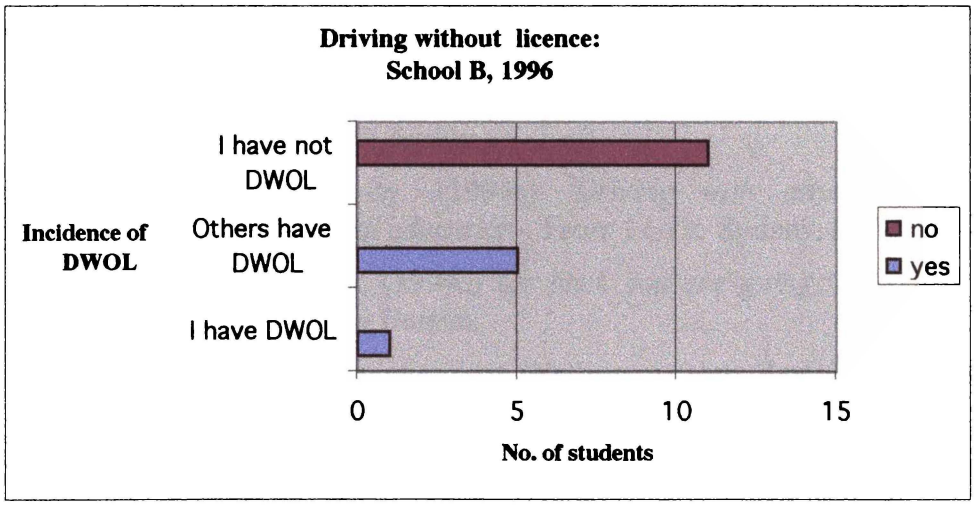
8 How important do you think it is to have a licence to drive? reasons please.

Results: Driving without a licence – Preliminary survey



Driving without a licence: School A and School B comparison, 1996.





Results of driving without a licence question at the beginning of the first implementation.
(Refer also to Appendix I, Sample responses from students 1d: The dangers of DWOL, 1997).

Appendix B: Survey: Eighteen Traffic Resources.

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Appendix C: TAKE FIVE – Rationalisation of human factors contributing to crashes

"TAKE FIVE": Development – simplification or rationalisation of *fourteen human factors* contributing to fatal and injury crashes (LTSA, 1995b & 1996, p. 49) down to five.

The five elements of the *Take Five* Checklist of Traffic Safety (T5CTS) involve the driver in making careful decisions relating to: *Speeding*, *Alcohol* and Drug-taking with driving, *Concentrating* more efficiently, *Communicating* more effectively, and showing more *Courtesy* to other drivers.

Too fast for conditions	36.3%	1 Speed		
Alcohol or drugs	32.3%	2 Alcohol		
Failed to keep left	16.6%	3 Concentration.	4 Communication.	5 Courtesy.
Inexperienced or incompetent	14.2%	3 Concentration		
Pedestrian factors	11.6%	3 Concentration	4 Communication.	
Failed to give way / stop	9.8%	3 Concentration	4 Communication.	5 Courtesy.
Inattention / diverted	8.6%	3 Concentration		
Tired or fatigued	8.0%	3 Concentration	4 Communication.	
Overtaking	4.6%	3 Concentration	4 Communication.	5 Courtesy.
Did not check adequately	3.8%	3 Concentration		
Physical defect / illness	3.6%	3 Concentration		
Suddenly braked or turned	3.6%	3 Concentration	4 Communication.	5 Courtesy.
Cyclist Factors	2.2%	3 Concentration	4 Communication.	
Following too closely	1.0%	3 Concentration	4 Communication.	5 Courtesy.
Vehicle factors	9.8%	Not human factors		
Road Factors	10.6%	Not human factors		
Weather	4.8%	Not human factors		

Appendix D: TAKE FIVE – Programme teaching objectives

Targeted learning outcomes are abbreviated and are shown in brackets as follows:

- Skills (S),
- Knowledge (K); and
- Attitudes (A).

***TAKE FIVE* – PROGRAMME TEACHING OBJECTIVES**

Analysis Phase:

	1 Involve students in identifying what they know about crashes.
"The past"	*(S:measure/review/selfreview; K:crash outcomes/causes).*
	2 Involve students in using this knowledge with selected crashes, road trauma).
	(S:assess/review/analyse/apply K:human/other factors).
(Knowing about crashes)	3 Involve students in analysing factors that cause crashes.
	(S:analyse/list/identify; K:influences/factors).
	4 Involve students in discovering patterns in crash analsyses. *(S:identify/report; K: patterns/trends).*

Confirmation Phase:

	1 Recognise / identify Antecedents, Behaviour & Consequences (ABC).
"The present"	*(S:recognise/identify/explain;K:antecedents/consequence).*
(Recognise and Identify)	2 Become familiar with LTSA crash statistics.
	(S:measure/compare;K:statistics/peer/personal influences).
	3 Recognise / identify safety themes in crash analysis patterns.
	(S:suggest/interpret/recall; K:danger/risk /road code).
	4 Recognise / identify features of different road user groups *(S:identify/explain; K: road user types/problems).*

Synthesis Phase:

	1 Students rationalise what traffic behaviours to avoid.
"The future"	*(S:demonstrate/show; K: optimism bias/attribution/peer p.)*
(Develop safety	2 Students rationalise in terms of safety for self as road-users.
strategies)	*(S:self review/resist/choose; K+A: being safe/positive role).*
	3 Students rationalise safety for others in traffic situations.
	(S:show/demonstrate; K+A: safe strategies for others).
	4 Students rationalise in terms of Take Five Checklist of Traffic Safety (T5CTS).
	(S:communicate/show;K+A:Take Five ideas of prevention).

Application Phase:

	1 Students apply knowledge and skills to traffic scenarios.
	(S:apply/choose; K+A: compliance/courtesy).
(Put into practice)	2 Students apply knowledge and skills within an Arts project.
	(S:translate/transfer; K+A: positive messages of safety).

Appendix E: TAKE FIVE - Course Learning Outcomes (Behavioural Objectives)

These learning outcomes relate directly to the teaching objectives listed in Appendix D. To be effective, they needed to be capable of being achieved in the classroom.

TAKE FIVE **- COURSE LEARNING OUTCOMES**	
I	
Analysis Phase:	1. Students review/share their existing knowledge, using authentic crash scenarios, as they describe *dangers* and *possible outcomes* in a letter to family/friend.
(Knowing about road trauma)	2. Students apply existing crash knowledge to further *analysis of crash scenarios* and *assess* a range of other *causal factors.*
	3. Students can *identify and list* the common factors involved in crashes and *categorise them* into human and other factors.
(***The Past***)	4. Students can *identify and report on* the common crash factors and *patterns emerging* from a range of different crash scenarios.
II	
Confirmation Phase:	1. Students can *identify* human factors in crash scenarios *and can assess and explain* what factors might have been an influence in crashes.
(Recognise and identify)	2. Students can *interpret LTSA crash statistics* and can *measure and compare* these with outcomes from the crash reports from a variety of media that were analysed in class.
(***The Present***)	3. Students can *explain safety themes* emerging from crash analyses and *can suggest different ways* of reducing the likelihood of being involved in crashes with particular reference to the Road Code.
	4. Students *can identify and explain* what characteristics different road users have and *can outline problems* that might arise for them in a range of traffic-related circumstances.
III	
Synthesis Phase:	1. Students *can show and offer wise suggestions* to reduce a range of risky traffic behaviours and to reduce problems associated with personal and peer influences in simulated traffic situations.
(Develop safety strategies)	2. Students can *review their personal situation* and *demonstrate/ suggest what actions* they need take to keep themselves safe in a range of traffic situations.
(***The Future***)	3. Students *can show and suggest* actions which demonstrate that they can communicate clearly and *are aware of the responsibilities of being a driver* while maintaining the safety of others.
	4. Students *can link all of the factors* contributing to crashes and being safe into *explaining a checklist for traffic safety* (crash prevention / safety promotion).
IV	
Application Phase:	1. Students *can identify and make wise choices* about the safest options to take in a range of different traffic scenarios.
(Put into practice)	2. Students *can transfer a positive aspect of safety into another tangible form* such as an Arts project.

Appendix F: TAKE FIVE - Teaching topics.

The teaching topics included a range of issues that were relevant for students:

Phase One: Analysis:

(a) Alcoholic carnage: a story of a young adolescent male, drunk while in charge of a vehicle, who killed his two best friends.
(b) Head-on Survivor: a story of a honeymoon couple's head-on crash experience.
(c) Alcohol to excess: a story of an unlicensed mother under the influence of alcohol who killed an innocent bystander.
(d) Killer weekends: a review of weekends in which multiple numbers of deaths occurred throughout New Zealand.
(e) Passenger vulnerability: a personal account by an adolescent of the horror of being a passenger who was injured in a crash.
(f) Injury crash: a review of the long-term impact and duration of rehabilitation from injuries caused by a crash.
(g) Hurry sickness: a newspaper article relating to speed.
(h) Tourists: how vulnerable overseas tourists can become on New Zealand roads and the implications for other travellers.
(i) Road Rage: a review of articles and video of "road rage."
(j) Pedestrian danger: a personal interview with a teenage survivor of a pedestrian crossing crash.
(k) Truck drivers: a review of articles concerning trucks on roads.

Phase Two: Recognition / identification.

This phase included confirmation of themes and patterns of behaviour from the topics in the previous section. Through identifying key factors leading to road trauma, other related links could be explored from themes identified in the DE literature survey:

(a) Peer pressure and peer preference: how each works in traffic situations.
(b) Age: patterns of youth behaviour in the traffic environment.
(c) People's rights: considering the rights of all road users.
(d) Choice: considering alternatives in the driving task.
(e) Decision-making: driving as a multi-tasking activity.
(f) Realistic goals: towards safer outcomes.

Phase Three: Synthesis

This phase involved the synthesising of issues that culminated in:

(a) Reinforcement of safety using the 'five' simplified crash factors (below).
(b) Confirmation of the TAKE FIVE checklist of traffic safety (T5CTS).

The five principal factors contributing to road trauma were rationalised as:

1) **Speed** increases the likelihood and severity of crashing, especially when other factors like wet road conditions are involved, therefore drive more slowly and carefully.
2) **Alcohol** and other **drugs** are high risk, mind-altering substances that are dangerous when used in association with driving therefore, avoid driving under the influence of alcohol.
3) **Concentration** is imperative at all times and includes several factors like fatigue awareness, environmental factors, driving regulations and all forms of distraction.
4) **Communication** includes the fundamentals of signalling but in the driving task it can also include visual cues, aural cues, and kinaesthetic elements like gesture.
5) **Courtesy** includes consideration of the rights of others and can be cultivated arguably as a means contributing to a more positive road-user climate.

Phase Four: Application and mediation through the arts.

This phase consisted of:

(a) an application exercise to identify the safest strategies from ten traffic scenarios;
(b) a mediation exercise using the arts to reinforce a code of safe practice.

SCHOOL STUDENT QUESTIONNARE: # 1
PART ONE: Please answer these questions:
If you need help please ask:

The questions will not take long to answer.
Please note that:-

- A nswers you give will be **confidential.**
- No names will be given out!
- Circle correct answer and give further details where required

Please give as much information as you can.

1 I am a Female Male student aged 15

in Form 5

at School /College

2 I have lived in New Zealand since 1981 and I regard my descent as being mainly

Maori / Polynesian / European / Asian / Other

If you answered Other please explain further.....

Answer 3y or 3n - Drivers Licence Status

3n

a I have No Drivers Licence yet.

b What reasons do you have for not having a licence yet? - describe...

N/A

Drivers Licence Status Continued....

c Who will teach you to drive?
i Driving Instructor ii Father iii Mother
iv Family Friend v Relation vi Personal Friend
vii Other

3y I have a Learners Driving Licence at the moment

a Learners, Restricted, Full

b Explain why you wanted to get your licence?

N/A

c I was taught to drive by a
i Driving Instructor ii Father iii Mother
iv Family Friend v Relation vi Personal Friend
vii Other (who?...)

4 **Driving Without a Licence** (dwol)
I know people who do drive without a licence.
i Father ii Mother iii Family Friend iv Relation
v Personal Friend vi Me

5
Your ideas why these drivers drive without a licence.

a I think its because.....

they can't be bothered getting their licence

b I know its because.....

N/A

6 How important is it for people to have a licence to drive?
Explain reasons below.

Its quite important because they need the knowledge of how to drive properly

Questionnaire 1.2 July 96

7 Give reasons if you have any concerns at this stage about

a **Getting a Licence**

b **Driving on the roads** N/A

8 Put in order of importance, things you want to get from this Driver Education class.

My restricted

9 Do you think you are likely to be injured or killed in a road crash?
a high likely b maybe c not likely
reasons:-

10 Is New Zealand's road toll statistics for young drivers
a serious? b average? c not a worry?
why?...

11 What ideas do you have about the recent Huntly Road Crash which killed several teenagers?

N/A

12 Is Speed dangerous no matter what the road conditions are?
a not dangerous b OK c mostly dangerous

13 Its OK to drink and drive if you are not carrying passengers. a Agree b mostly true c Not OK

14 Its best to abuse other drivers if they get in my way.
a agree b only sometimes c disagree

15 Can you think of any suggestions which could be made to lower the country's road deaths and injuries?

N/A

16 It makes me feel good when I am courteous to other drivers. How do you feel about this statement?
a don't agree b sometimes agree c agree

17 Has any car you have been travelling in been stopped to beathalyse the driver?
a no b how many times ( ) c yes

18 Seat belts aren't that important to wear.
a agree b sometimes c disagree

19 It is the duty of each person to do his/her job the very best he/she can.
a not at all b sometimes c agree

20 Can you name an event in New Zealand in which you have felt quite proud to be a "Kiwi"? What was it? N/A

21 Is New Zealand's annual road death toll for 1994 and 1995 nearer which of the following?
a 430 b 580 c 650 d 720

22 Which age group has the greatest proportion of deaths by road crashes?
a 15 - 24yrs b 25 - 34 yrs c 35 -44yrs d 45 -55yrs.

SCHOOL STUDENT QUESTIONNARE: | **STUDENT CODE #**

PART ONE: Please answer all questions:
Please ask for help if you need to,
The questions will take about 30MINS to answer.
Please note that:-
- **Answers you give will be confidential.**
- **No names will be given out!**
- **CIRCLE correct answer** give details where required

Please give as much information as you can.

1 I am a **Female Male** student aged [ ]

In Form [ ]

at [ ] School /College

2 I have lived in New Zealand since 19[ ] and I regard my descent as being mainly

Maori / Polynesian / European / Asian / Other

If you answered Other please explain further.....

Answer **3yes** or **3no** - **Drivers Licence Status** [ ]

3no a I have No Drivers Licence yet.

b What reasons do you have for not having a licence yet? describe...

Drivers Licence Status Continued....

c Who will teach you to drive?
i Driving Instructor ii Father iii Mother
iv Family Friend v Relation vi Personal Friend
vii Other

3yes I have a **Driving Licence** at the moment

a Learners, Restricted, Full.

b Explain why you wanted to get your licence?

c I was taught to drive by a
i Driving Instructor ii Father iii Mother
iv Family Friend v Relation vi Personal Friend
vii Other (who?...)

4 **Driving on NZ roads Without a Licence** (dwol)

I know people who do drive on roads without a licence.
4 i Father ii Mother iii Family Friend iv Relation
v Personal Friend vi Me

5 Your ideas why these drivers drive without a licence.

a I think its because.....

b I know its because.....

6 How important is it for people to have a licence to drive?
a very important b average c not important... (why?)

7 Give reasons if you have any concerns at this stage about

a Getting a Licence

b Driving on the roads

8 Put in order of importance, things you want to get from this Driver Education class.

9 Do you think you are likely to be injured or killed in a road crash?

a high likely b likely at some time c perhaps
d doubtful e not at all

10a Is New Zealand's road toll statistics for young drivers

a serious? b mod serious? c average? d alittle concern?
e not a worry?

10 b Which age group has the most deaths?

a 15-24yrs b 25-34yrs c35-44yrs e 45 -55yrs

11 What ideas do you have about some young drivers crashing and killing several friends at a time?

12 How dangerous is speed no matter what conditions?

a not dangerous b little danger c some danger
d often dangerous e mostly dangerous
why?

13 Its OK to drink and drive if you are not carrying passengers.

a Agree b mostly true c sometimes true
d moderately true e Not OK

14 Its best to abuse other drivers if they get in my way.

a agree b mostly true c sometimes true
d very seldom e disagree

15 Can you think of any suggestions which could be made to lower the country's road deaths and injuries?

16 It makes me feel good when I am courteous to other drivers. How do you feel about this statement?

a disagree b very seldom c sometimes agree
d mostly agree e agree
Ideas?

17 Has any car you have been travelling in been stopped to beathalyse the driver?

a no b yes c how many times?
details?

18 Seat belts aren't that important to wear.

a agree b mostly agree c perhaps
d mostly disagree e disagree

19 It is the duty of each person to do a job the very best possible.

a not at all b a little c sometimes good
d mostly agree e agree

20 Can you name an event in New Zealand in which you have felt proud to be a "Kiwi"? What was it?

21 Was N Z's annual road death toll for 1996 nearer which of the following? a 430 b 510 c 650 d 720

Initial Student Questionnaire 1.3 July 1997 page #2

Invitation to students: **Driver Education - Trial Project - 1996**

Objectives: I have been invited to trial a Driver Education programme with you in this class over the next term. It has been designed after considering educational factors which can be explained more fully later on.

About me:

- I am a married father with 4 teenage girls 2 of them drivers.
- I am studying full-time at the University of Waikato in Social Sciences having taken leave of absence from my job of Music Adviser for two years.
- Driver Education is my main topic of study.
- I am a trained and registered Secondary School Teacher.

What I need: In developing any programme of study,a trial has to be undertaken.

- I need to trial this programme in a secondary school and it has been arranged that I use the students in this class. The programme has a specific objective, put simply, to develop an enjoyable and helpful driver education programme for students in senior secondary classes.
- I need to keep accurate records of the details of the programme, its content, the teaching of it and responses which students make.
- I need from time to time audio, video and written records of work done in the class so that methods, organisation and content can be considered for progress reports to be made.
- To assure you that data / information which comes from you will be **confidential** and only used for purposes of programme development. It may also be used to discuss matters with you, your teacher and my supervisors at the University of Waikato.
- To assure you that work set will not only contribute to your personal development but will assist others with developing the course further.

What I need from you:

- Honesty in responses so that all information remains as true to you and your beliefs as possible. Please ask anytime for clarification of any concerns.
- A commitment to do the best you can - it is the aim of this project that all students will succeed including you!
- Feedback when asked - this will most often be included in a diary entry for the day when keeping records like those mentioned below.
- Regular written records which will help me understand things from your perspective to be kept in a notebook provided.
- Your consent or willingness to become involved. This consent is required so that the University is satisfied that ethical issues are maintained and no one is taken advantage of.

I understand that information from this Driver Education programme will only be used as outlined above. I am prepared to be involved and will respond honestly to requests to the best of my ability. I understand that my personal identity will not be disclosed and any references to my individual contributions will be protected through a numerical code where necessary.

Signed:. Name: . .Date. . 17/7.

Appendix I: Sample responses from students:

Sample responses from students 1a: Crash analysis exercise.

Statistical Breakdown of Crashes: June-Aug 1997

Acc#	Inj	Death	Date	Age	Gender	Status	Mode	Factors	Comments
5		1	14/7/97	18	F	D	Car X Pole	Vehicle	Inexperience /
		1	"	18	F	P	"	"'	Innocent victim
6		1	14/7/97	46	M	D	Car X Tree	Time?	Tiredness, 1.15am
7	1		21/7/97	22	M	P	Car Off Road	Speed	Innocent victim, weekend
		1	"	19	M	P	"	"	Innocent victim, inexperience?
		1	"	19	F	P	"	"	Innocent victim,
		1	"	20	M	D	"	"	Rx7 Mazda, rotary, light, 2 Door, Small back seats,
8		1	14/7/97	70	F	P?	?	?	Injury victim later died
9	1		21/7/97	20?	F	P	Car X Roll	Speed	Beach, stupidity, show off (alcohol?)
		1	"	20?	F	P	Car X Roll	Speed	1.40am.

Sample responses from students 1b: Impact of crash analysis statistics

Task: Summary - What I think about the statistics so far. July 30th,1997 School A

- Yes it is a bit clearer for me to understand the statistics on driving - e.g. driving in the fog. I had just learned some helpful hints (this entry possibly shows the student doesn't know what statistics really means but has made the effort to put some words together in a meaningful way)
- Old people drive too slow (we haven't mentioned this and it really hasn't been discussed as a contributing factor to crashes), Young people drive too fast, and don't have much experience, more males die on the roads than females.
- Passengers die too. Deaths 14yrs -19yrs (11) 20yrs-70 yrs (9); females die less than males (better idea of statistics).
- The newspaper prints more about young people dying than older people (this comment shows the potential for errors of attribution); younger people die because the lack of experience.
- Males die easier than females.
- More younger people dying that maybe due to inexperience. Newspapers publish more younger deaths than older.
- The majority of people that die on the road are teenagers, more males die on the road than females.
- More people have died in the ages of 14 - 19 than the ages of 20 -70, there is less female dying and getting injured than there is male.
- I am surprised how many unexperienced drivers are killing innocent people, I have noticed speed is the fact that's killing people, and most of the accidents are caused by males.
- I think that too many teenagers are dying because of inexperience and foolishness. More males crash and die, they usually crash into other cars.

- We found out how they died and what caused the crash or injury, young people are dying as well as old people but young people are dying more.
- What I think about the statistics so far... the deaths are too high. More young people die on the roads than older people.
- I am shocked about how many people are in road accidents and how many people die on roads. From the age of 14-19, 11 people have been injured or killed in a road accident with a six year gap from the age 20-70 a total of 9 people have either killed of injured., More accidents on the roads have been caused by males. More males die on the roads than females - a total of five deaths and 9 accidents males are a total of 8 deaths and 15 accidents.

Sample responses from students 1c: Impact of crash analysis statistics.

Task: Summary - What I think about the statistics so far. Aug 5th 1997, School B
Vocabulary: Factors, Status (type of road user), Mode (what type of transport involved).
First Impressions (After one session...doing statistics in the back).

- My impression is that Waikato region has a lot of car accidents.
- My impression from this information studied is that NZ's road toll is very high for its population. Waikato's toll is in particular very high.
- I have decided that of the 5 crash statistics we have covered that most of the involved are young males ranging between the ages of 15 and 24years.
- Most of the people who were either killed or injured in the accidents were young males. Speed was the major factor in all the accidents.
- My impressions is that there are more males in accidents that females.
- The impression I get from the statistics is that people under the age of 25 are the more likely candidates for crashing. I think it is from a lack of experience.

Sample responses from students 1d: The dangers of DWOL.

Task: Summary-What factors are important when DWOL August 14th 1997;
School A Responses.

- The danger for driving without a licence is you can kill someone who is innocent and can cause crashes on the road. The person who is driving without a licence might not know all the road code and haven't got insurance.
- You could kill innocent people because you won't have the knowledge.
- Sometimes there is and sometimes there isn't. There are people that have no licence but have been driving for a long time. There are also people who don't have the knowledge about the road skills you need.
- No insurance.
- No insurance.
- Don't know road rules, no insurance, caught by police and fined a lot of money, disqualified licence.
- You could get pulled over.
- You will get a big fine.
- You might get caught.
- You might kill someone and you might get caught and fine for it.
- No insurance, breaking the law, could get fined, also your life (injury/death?).
- You have no insurance on a car if you crash.
- Risking lives of other people.

Sample responses from students 2: Kevin's Sentence (Reality Activation)

July 31st 1997. School A Students' Responses.

Task 1: Kevin's sentence: *Description* about the story.

- He thought it was a dream, he drank and drove, killed his two best friends.
- He had too much to drink, he got arrested.
- He talked to students about the crash; friends parents helped reduce his sentence; it was the right sentence - hurting inside he didn't deserve to go to jail.
- Drove after having some drinks; wheel hit curb and lost control, hitting 2 poles and a tree and was given 750 hours of community service (PD) moving around schools and telling students of his experience.
- And went for a drive for a bit of action; following some chicks at high speed until the right wheel hit a curb and it went out of control finally stopping when it hit a tree; K was knocked out and his two friends died.
- K was 19 when he killed his two best friends. K was drunk and wanted some action seeing a car full of girls. Drove too fast, hit curb and did a 360 turn smacked into two power poles and came to a stop when he crashed into a tree. For his punishment he had to do 750 hours of community service telling his story to schools;
- Killed best friends, few drinks before driving, at a set of lights saw a car full of girls, tried to impress them and hit a power pole.
- Drinking with his mates, just being cool and relaxing in the car. Driving too fast to catch up with the girls. He didn't realise how badly the situation was his best friends were both dead. This was just the beginning. He talked to 8300 students regretting it a lot, his pain and hurt would not go away, it would be with K for a life time.
- K was being silly and chasing after some girls in a car. K was driving drunk. After his community service the police wanted to appeal the decision and have him sent to jail.
- K's foolishness killed 2 of his close friends. K survived and received community service of 750 hours. K and others involved talked to students from eleven different schools and his story effected a lot of students in a positive way.
- K had a few drinks at a local bar. He was probably (so) intoxicated that he decided to drive on the roads. He pulled up next to a bunch of girls in the car beside them and got so girl crazy that he chased around for them and crashed.
- Kevin drunk and drive [sic] he's a bloody idiot, community service.
- They wanted to rub it in (police?). They wanted him to go to jail. Telling young people to be careful. Made K feel like he meant it (that he was sorry?).
- K driving friends after a few drinks. Drove his right wheel of car into curb, hit some poles and ended up around a tree.
- K had too much to drink. He stopped at the lights for a bit of action. K had a crash, he killed his two best friends.

Task 2: Kevin's sentence: *Imagination* about being Kevin at the traffic lights!

- When I saw the girls, I think I would do the same thing as K.
- The night was so scary but I knew I had a few drinks.
- Adrenalin, excitement.
- I would be really excited but I would still try and keep my mind clear so I would be able to react as soon as something bad will happen.
- At the lights would be excitement getting some action with the babes.
- I wouldn't feel anything (this response shows one student's hesitation or reluctance to be someone else especially with the outcome that resulted). [He was] showing off (implied 3rd person).
- Then we saw some primo chicks so I decided to follow them. My mate and I were still drinking quite a lot of alcohol. They were urging us to make a move, but I had a bit too much to drink and I could not keep control of the car and spun out and hit down two power poles then came to a stop by hitting tree (this student makes the story come alive).
- If I was K, I guess I would feel excited and ready for a piece of action.
- If I were stopped at some lights and was waiting for a bit of action [and] I was drunk, I would feel hypo, adrenalin rushing from everywhere and excitement in the night.
- There was a bunch of girls in a car beside us I decide to catch them!
- I would feel sad and angry.
- I think that he was showing off and trying to impress his friends (This student was fairly slow to get going and had quite a bit of difficulty trying to imagine. He had been absent for the documentary which compounded the difficulties of the exercise for him. It is difficult to write about something you don't know about. Those absent tend to get behind and miss vital parts of lessons and continuity is interrupted).
- It must have been hard for K. He had just been out with his friends not knowing what was to happen, with out the intent of killing his friends (hard for this person to imagine).
- I would follow the car when the lights go green and chase the car of girls and race them.
- How I'd feel at the lights would be excitement getting some action with the babes!
- I would probably race with them.
- I would feel alright (not much imagination).

Task 3: Kevin's sentence: *Imagination* about the story.... *After the crash!*

- I would feel bad and may think of killing myself so I would not have to face the consequences. I would walk away and never look back or think back to what happened.
- I'd feel so angry, devastated, I couldn't believe that I was responsible for killing my 2 best friends.
- Disgusted in myself, frustrated, annoyed, I would really hate myself and have no sympathy for myself at all, only for those in grief.
- I would be angry with myself. I would hate myself. I wouldn't be able to cope.
- It would take me a long time to realise that my friends were dead and that I killed them. The guilt would grow and I would be so depressed.
- It would be hard to come to terms with what I would have done, killing my friends. That's something that I would not do. If I did it would feel like I didn't want to live any more.
- He killed his friends and he now has to live with this burden.
- I would be very sad that I killed my friend over a car of girls and angry.
- I'd feel so angry. That would be on my mind for the rest of my life. My closest buddies and I killed them. I don't think I could live my life without them.
- I would be very sad and angry.
- Not that good.

Sample responses from students 3a: Diary excerpts

Implementation 2 (School A) Aug 12th 1997, Sonya and Susan's Visit.

The visit of Sonya and Susan to the School A's Driver Education Class had significant implications for the students from an awareness perspective. These indications are specifically expressed in their statements. Deeper implications, however, lie beneath and really require further explanation before the survivor and the victim's perspective can be fully understood. The absence of reports from these perspectives can be seen in newspapers as well. Thoughts expressed by many students are important to cultivate through any programme concerned with preventing road trauma. Personal interviews with survivors reveal hidden factors behind road trauma not often obvious through news reports, which deal primarily with accident statistics or facts. The missing information as far as the victim is concerned represents irrefutable evidence of a horrific event and a desperate struggle for survival and healing as a consequence. I consider the implications for the driver education process from comments made by students This also represents part of the analysis process from a researcher perspective.

a) *When Sonya and Susan first walked into the classroom, you wouldn't have guessed that on the 27th March 1996, they were involved in a horrific accident*[1] *which left them both hospitalised with serious injuries*[2]*. It didn't really hit until Sonya and Susan told the class of their injuries that anyone realised just what they had gone through*[3]*. Also when Sonya told us of the driver of the van that hit them was in jail for only 3 months. I can't believe how someone who almost killed two people should get out with such a lenient punishment*[4]*, when it has taken Sonya and Susan over a year to recover.*

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[1]Survivors, especially after a period of convalescence, often can show little visual evidence of the pain they have suffered, the invisible hardship they continue to endure, the frustration of losses in faculties and their quality of life. If mental capabilities have also been affected, these additional burdens can be felt by a wider network of people (the immediate family) as the responsibilities for their increasing dependent care extend outwards to other individuals and organisations.

[2] More often than not, hospitalisation implies serious (life threatening) injuries have occurred, and even when injury has been sustained at that level, the period of recovery is often not considered by those not involved. Frequently the injured will require on-going medical treatments which are not often adequately covered by the ACC or Insurance Company policies. Some people are rendered permanently disabled, and will not recover their faculties and abilities. Some will discover long term effects may recur after periods of seemingly trouble free existence.

[3] The telling of a real story by the victims themselves is evidence that cannot be disputed. All of the issues which can lie hidden between the lines of a newspaper or television report, or remain unsaid, can be opened up by question and can be explored by students. Valuable links can be established with personal experience. The story lends credence to strategies, policies and campaigns providing anecdotal insights into cause and effect. While it is often by making mistakes that people learn best, learning from someone else's experience is a much less traumatic way for any new learner to benefit - averting possible tragedy in the future.

[4] Once guilt has been established, the punishment to be meted out can only be considered in terms of community service, jail, or through fines. It is hard for victims concerned to

b) Two people came to our class to talk about their crash. We found out that alcohol was involved[5]*. We found out that they got hit crossing the road.*
c) S and S were walking across the road to Macdonald's when they got hit by a drunk driver. They were thrown 24 metres along the road[6] *and they landed on their heads, S was in hospital for over 5 months*[7] *and the driver only went to jail for 3 months.*
d) Their accident shouldn't have happened[8] *and now that it has, it is a life sentence for both of them especially Sonya. The driver who was drunk was only in jail with him and now has nothing wrong with him. This was a stupid accident*[9]*.*

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agree that real justice has been done when punishment can be completed in a short period of time for the offender whereas the victim may often be affected for life. Such injustice results in profound anger being expressed by the injured parties while they seek to cope with the demands (logistical, physical, mental and financial) over time scales which far exceed the duration and punishment obligations of the offenders.

[5] What becomes obvious throughout the stories are the factors contributing to the crash. Where such factors are widely known and can be regarded as preventable, stories from survivors take on a more poignant and tragic dimension, providing yet more evidence for all road-users to consider them and make wise decisions. Alcohol in particular has the ability to impair judgement, logical thinking and cause a person to act differently from normal. In positions where personal responsibility is a significant part of the activity (e.g. in driving), faulty decision-making, often for immediate personal (egocentric) ends, becomes a recipe for potential disaster. Alcohol (and other drugs) affects wise decision-making. The bitter irony is that negative outcomes from unwise decisions do not necessarily affect the perpetrators of serious crashes. Such collisions often only physically affect innocent victims.

[6] When mass and weight (a vehicle) are set in motion, the laws of physics can be demonstrated whenever a collision occurs. Where excesses in speed are involved, greater damage can result. Where vehicular forces connect with a human body, frequently luck becomes the only significant determiner of survival. Physical damage to human bodies is the obvious outcome when the two such forces meet. Recommended maximum speeds in built up areas will in most cases ensure survival. However, death to humans is more certain when these limits are exceeded. The distance a body is propelled from an impact is difficult for people to imagine.

[7] Convalescence is an arduous and painful process. Hospitalisation is only one part of the process. Victims often face many months of unemployment, ruined careers, hours of therapy, with the possibility of followup operations being required in spite of any immediate recovery from corrective and/or reconstructive surgery. Where metal plates have been inserted, their removal is ultimately required. The costs for such intensive health care is often funded by the public which somehow does not appear to be the responsibility of the offender - maybe this needs further exploration.

[8] The lamentable fact in this particular case (as this student stated) was clearly that the accident should not have happened. The laws governing driving on the road were being flouted by the offender - through deliberate disobedience. As a consequence, with vision impaired, the driver's actions involved two pedestrians, who were legally within their rights as they stood on the median strip waiting to cross the road. The injustice of this case centres around the lack of physical harm to the offending party and the serious and permanent injury to the victims as the law abiding parties as mentioned in footnote 5.

e) *The people came in yesterday to talk to us about their accident they had with a van. Sonya has 16 screws and 4 plates and 1 pin (in her body)*[10]
and a cracked jaw and they were drunk and the driver was drunk and was over the 50km speed limit and were knocked 24 metres[11]
f) I think it would be hard for them to tell us about the accident[12] *because of the way they were speaking and the actions they were doing.*
g) I didn't really think it was this serious. They both looked fine[13] *until they told us what happened. I was really shocked. They must have gone through so much pain*[14].
h) What I thought about what the two people said. I felt really sad and angry.[15] *I really felt sad because why did it have to be them? The one night the drunken*

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[9]This was indeed a stupid accident as the student remarked. Clearly the offender failed to take the responsibility given to him when receiving a licence; a contract which implies a need to uphold the law and drive according to the regulations.

[10] See footnote 7. "No-one gets used to operations" as Sonya Daly explained. "Only the fear of them may diminish". No-one seriously looks forward to an operation for its own sake with its pain, associated time in convalescence and rehabilitation, each anxiety becoming an integral and unavoidable part.

[11] See footnote 6. Even when being marginally over a speed limit (indicating a maximum for a built-up-area), the human body is powerless at counteracting the forces of a motor vehicle in motion. Serious injury is the only possible and likely outcome of such a confrontation.

[12] Both victims who have presented themselves to talk about their ordeal have subsequently indicated that they no longer are prepared to tell their story. For one seriously physically and mentally impaired student, the growing sense of self-consciousness about her condition had taken its toll. She did not want to be revisit the incident through another classroom visit. Similarly, after being keen to visit classrooms recently, the other survivor has (through presenting it through the classroom) reached a stage, having worked through the issues in her mind, now wants to put the event behind her and get on with the rest of her life. Most other victims interviewed showed a deep sense of unresolved resentment and anger at the events as they had unfolded. Many described how they were different people as a result of the experience and all they had to go through in spite of appearances being the same. It is vital for survivors to continue to share their trauma, if only to dispel the ignorance of the populace (cited in footnotes 1, 13), and to encourage further empathy and understanding with victims as noted in footnote 15.

[13] See footnote 1. Not all impairment is visual, nor will appear as serious. Appearances are deceiving and do not convey a sense of the reality of the full impact of road trauma.

[14] When students were able hear first-hand about the impact of a particular incident of road trauma, individual reactions could show a range of reaction from real concern to indifference. Where an empathy for the injured could develop through the unfolding of a story highlighting the extent of injuries to a victim, a greater understanding of their pain and suffering could be seen together with a realisation of some hidden truths. Those least likely to be impressed by such events appeared to be those students who were consistently less likely to show empathy towards others in the classroom and frequently displayed an egocentric perspective in their dress, work habits, comments and behaviour.

[15] In the case of this student, both emotions of sadness and anger have been expressed simultaneously- empathy with the victims' trauma and anger at the injustice of the

driver took Sonya well basically her life away - he took one side of her hearing. She got plates in her face, pins in her legs. Susan wasn't that serious but it was still pretty bad. It made me realise what can really happen, because before when I heard about an accident or something I didn't really think much[16]*, but hearing what S and S went through I felt for them.. they were just ordinary people, innocent people. I'm really angry*[17] *at the car - he basically took their life away and all he got was three months in jail.*
i) Two people came to our class and told us what happened. We had to ask them questions about what happened, how when and what it was like to have an injury that would be with you for the rest of their lives.
j) Our visitors who came to our class were two 19 year old females. They were hit by a drunk driver on Grey St in Ham East.
k) Sonya and Susan were victims[18] *of an accident last year in March. They were crossing the road when a drunk driver hit them and carried them 20 metres. They had some pretty serious injuries and the driver only got 3 months in jail.*[19]

Additional comments (how it made you feel....)

- *I think the drunk driver should go to jail for 20 years.*
- *I think that the drunk driver should go to jail for a longer period of time.*

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incident. In this case, the student has not only made a personal connection with the story, and the story teller, but has specifically acknowledged her own complacency and ignorance.

[16] Through listening and reflecting on the story, the same student was able to reconstruct the events in terms of her own values and understanding. Initially listening to the victim provided the facts of the story. Subsequent input from teacher and victim provided the broader scope of implications. Having been given time to reflect enabled her to consider all things in the light of her own experience as a personal response. Without proper time to reflect, personal connections with values and emotions did not occur. In each case where students did not reflect on the case as a homework exercise, deeper personal connections were non existent. Whether they were permanently absent could not be measured. Evidence of a personalised response with the incident was more likely to have an effect on matters surrounding general safety on the road than the opposite.

[17] A committed sense of injustice was strong in some students. When people are able to gain a sense of frustration and anger about something that didn't need to happen through the recounting of a personal story, greater gains in road trauma reduction become possible outcomes, not to mention the possibility of a safer and a more careful environment.

[18] The status of these guests in the classroom was clear according to this student. The term victim implies being the subject involved in a conflict, but as happens so much in road trauma, the victims were innocent. As indicated in footnote 8, the offender in this case suffered no physical trauma as a result of his conscious and deliberate decision to drive an unsafe (unregistered and unwarranted) vehicle. Being over the legal limit for alcohol, he carelessly inflicted permanent lifelong damage on to two innocent victims, essentially becoming victims of his ignorance and stupidity.

19 Refer to footnote 8.

Sample responses from students 3b: Diary excerpts

Implementation 2 (School B) Aug 12th 1997, Sonya and Susan's Visit.
Only 5 students were present from the class.

a) I thought that the story was very scary and sad[20]. You could really feel for them. All the necessities for driving were absent even a front windscreen - a plastic sheet was there. Alcohol was a gain a (fatal) cause. The talks were extremely informative and put you back on earth. You think it won't happen to you then it does[21].
b) Two students aged about 19 were struck down by a drunk driver who was driving a van with no wof/ref and a plastic sheet for a windscreen[22]. There were no deaths but there were moderate to serious injury (ies).
c) The people injured in the crash, didn't see the van coming towards them - they can't remember what happened[23]. Also the driver of the car had been drinking. The car didn't have reg or wof and no windscreen.

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[20] Responses from a different school - Evidence of personal connection with the event can be seen. The scary part for this student partly arose from doing what was legally right which was not sufficient to prevent S and S from being victims. Personal sadness is reinforced in the statements You could really feel for them and the experience which put you back on earth.

[21] This statement reflects that immunity from road trauma cannot be guaranteed even when doing things right. This was also dramatically demonstrated for this student during the same afternoon. The student was himself involved in a car accident following the visit of the survivors and was the driver responsible. For some reason his brakes had failed to activate and he realised he had panicked and rear-ended a car waiting for the lights. He mentioned that when the events came together in the way they did (which he thought he had under control), there was no way he could gain control. In addition to this, his statement also links itself back to the scary element of human fallibility previously mentioned - the notion that fallibility could result from someone else's stupidity or ignorance and impact on someone personally as an innocent party (like S and S), with them having to "pay the price" whatever that might be.

[22] This student has simply reported that the driver drove without a warrant of fitness, registration and a windscreen. The issues run more deeply though. The temporary windscreen under emergency situations could be regarded as legitimate, providing the vehicle was registered with a current warrant. However, other factors were also important in this case. As it is an offence to drive a vehicle where the windscreen is dirty or the vehicle is not up to warrant of fitness standard (section 22.1&3) therefore an offence was committed. The conditions of nighttime driving in a city street with poor lighting added to any reduction of vision caused by a temporary plastic windscreen. The choice to drive without reg or warrants however, was an offence, as was the driving of a vehicle when over the alcoholic limit specified by law. Essentially, driving responsibly is about choices and decisions. This driver made fundamental and illegal decisions consequently endangering the very people laws of the road were meant to protect.

[23] With traffic and people moving on all sides of the street in a city at night around 10pm, many factors can influence the focus of attention - including the possibility in this case of an expressed and singular goal of getting to a place like Macdonald's for some food. Where attention to danger is lowered by seemingly more important motivations (i.e. immediate wants or desires), basic safety precautions can be under prioritised. In this case, nothing was seen by either driver or the victims at the crucial time when extra vigilance may have averted the tragedy. Basic issues of personal awareness are at stake when in a dangerous environment. These need to be emphasised constantly to all road users

d) Sonya and Susan were hit by this drinking driver who was driving a van down town near Macdonald's.
e) Unfortunate accident which should never have happened[24]*. Both S and S were lucky not to be killed*[25]*. I felt sorry for her*[26] *(Sonya).*

[24] As with footnote 8, the accident was unfortunate and should not have happened. Objectively this student realises that if the driver had been complying with the regulations, everything would have been OK. It could also imply that the victims were somewhat negligent of their own safety if they didn't see the vehicle coming (i.e. were not looking as indicated in footnote 23 or thinking of other things in a dangerous place).

[25] While luck remains a highly subjective term, this is the first mention of luck in the student reviews of the visit. Looking at the patterns of road trauma, so many deaths and injuries appear to involve those who are innocent and unlucky enough to be involved. As this case so profoundly indicates luck could be aligned more with the driver than these victims. While the student qualifies his use of the word luck as the fortunate situation of not being killed, in other circumstances, to survive could equally be regarded as bad luck if the victim was severely and permanently impaired with little quality of life remaining. The idea of luck and risk may also need to be considered. Does luck have greater presence in proportion to the risk involved? If luck is to be considered in terms of safety, to live life without physical injury must surely be the greatest luck. For innocent victims, there doesn't seem to be enough luck around. Regrettably, in the year 2000, Sonya died.

[26] In footnotes 24-26, this student's summary contains a balanced overview in a few words. His final sentence adds personal empathy for the tragic outcome for Sonya (implied). Making this connection, he has acknowledged personal feelings toward her plight and in doing so is likely to become more wary of simple factors which emerged from this case as important factors in the prevention of road trauma for him personally. This student has realised in just 3 sessions (also witnessed by his verbal statements in the classroom) the all too consistent presence of recurring patterns in the statistics and from this story - innocent people are frequently the ones likely to be injured and killed. Maybe this responsibility, which rests with all drivers as the prime concern in the driving task, needs considerably more reinforcement than is currently the case. There are too many innocent victims!

Sample responses from students 4: Two perspectives (Reality Activation).

August 7, 1996: Responses from School A students to Petrina's case of killing some pedestrian and injuring another person.

Arguments For Her Defence (Not Going To Jail)

- P did kill two (one) people in accident - that's murder but it wasn't on purpose.
- P had a 4 year old child, was only marginally over the drinking limit but had some drinks after the accident to calm herself which altered the breath test reading.
- P had a 4 yr old child, had some drinks after the event but was over drinking limit though.
- She shouldn't go to jail because she has got a daughter.
- The client said she had two cans of beer before the crash and several after to calm her down and then the police gave her a breath test (she fled the scene, therefore, the breath test was faulty).

Arguments Against Her Defence (Going To Jail)

- She knew she had been drinking but still chose to drive; she failed to stop when she hit two innocent people.
- It's her own fault; she had been drinking.
- It's her own fault she knew she had been drinking but she still chose to drive.
- She had alcohol on her breath; should have thought of consequences; careless driving causing death; failed to stop after an accident.
- Shouldn't have been drinking and driving; should have thought of the consequences.

Sample responses from students 5a: Vocabulary exercises

A variation in responses can be seen where students were asked to explain some terms used in the DE programme. It can be seen how students grappled with the concepts of *passive* and *active* drivers as abstract concepts. It was my attempt to have students broaden their often egocentric focus and to gain a more objective overview of *who we are as drivers* and to differentiate between *what we do as drivers.*

- Passive Driver: The full time driver in us all.

Active Driver: The physical part of driving - (emotional and physical states)
Responsibililty:
Environment: Weather, time and roads;
Road Users:
Car: Predict decide, and act.
Take Five: Speed, Alcohol & Drugs, Communication, Courtesy, Communication.

- Passive Driver: The driver that isn't actually driving. This is the one that thinks about what should, could, or will happen, the one that has the knowledge.

Active Driver: The driver that is steering, changing gears, accelerating etc.
Responsibilities: Making sure passengers (if any) and pedestrians are safe.
Environment: Environment, weather time and roads.
Road Users: Road users - pedestrians, cyclists, other cars, trucks buses, animals and tourists.
Driving Tasks: Lights, seatbelts, vision, steering, perception, scan, identify and predict; decide and act.
Take Five, Stay Alive: Alcohol, Speed, Courtesy, Communication, and Concentration.
Age: 15-19 Danger: More people die between 15 -20.
Gender: Male are more dangerous. More males die on roads than females.
Culture: Youth are more at risk. Youth culture more dangerous.
Knowledge: The more you have the better. Important to know the road code.
Personality: Essentially your moods affect your driving. How you drive.
Physical State: -
Attitude: -
Gender: Males are more dangerous.
Experience: The more you have the better (x 2).
Emotional State: Don't take anger out when driving.
Responsibilities: -
Peer influences: -

- Age: the younger the (more) dangerous 15-19years.

Culture: Tourists.
Knowledge: The less knowledge they have (the drivers) are more dangerous.
Personality: Rebels don't obey the rules.
Physical State: People act differently when they are drunk.
Attitude: -
Gender Males that they own the road.
Experience: The more you have the better.
Emotional State: If you are angry don't take it out on driving.
Responsibilities: -

Sample responses from students 5b: Vocabulary exercises.

Aug 26th 1997 School B Responses

Students explore *environmental factors* as a class discussion (Consider SH1 between Hamilton and Bombay Hills):

- Lots of intersections and lots of cars,
- Traffic,
- Lots of traffic on the roads,
- High traffic density, has been made into a race track,
- Dangerous because of the conditions of the road (what conditions?),
- Because it is the most used road (x2),
- Nil (just got the question written down).

Weather issues.

- Can't see where they are going and road conditions are dangerous,
- Drive slowly and always be awake,
- Drop down your speed to suit the conditions,
- Slow down and slow down a lot more on corners,
- That the fact it was wet and windy at the time,
- Drive for the conditions (x2),
- Slow down especially around bends and corners.

Time of day

- The later in the week the more accidents occur - (x2),
- Believe the girl fell asleep at 1.10am because she was travelling too late; accidents tend to happen in the afternoons than during the day; on Thursday it shows more accidents happen than other days and nights,
- Night time can't see as far,
- It was at night (she crashed) maybe sought of fatigue came into the question.. Also (the diagram) seems to be showing that as the week gets to the end, crashes occur more commonly at night or late afternoon,
- Nil,
- Feeling fatigued, then take regular rests.

Time of year

- More traffic (weather) and road users.
- The holidays are the worst because everybody is on holiday and is driving (only concerned about?) to desired destination,
- More people on roads during holiday times,
- It would be terribly lonely, lost, 2 days before Christmas. Going on holiday,
- Nil,
- Drive to the conditions,
- Suggestions for other considering other road users.
-

Tourists

- They drive slowly, (can) also give way (drive?) on the wrong side of the road and careless driving.
- Drive slowly, unfamiliar with rules.
- Drive slowly, look at the view, (can) drive on the wrong side of the road.
- Tend to drive slowly and may have different road rules in different places.
- Drive slowly; can drive on the wrong side of the road; unfamiliar.
- Drive slowly, look at scenery, (can) forget to drive on the right side of the road.
- Drive slowly being unfamiliar with road rules and environment.
- Tourists provide hazardous (hazards?) driving slowly, unfamiliar with roads.

Sample responses from students 6: A Guessing Challenge.

Below are some student guesses about why I have called the programme *TAKE FIVE STAY ALIVE.*

August 7th 1997.

- Have a five minute rest, just in case you might crash! Have five minutes to put things together.
- Take five minutes to think about ways to keep safe.
- Take time to think before you drive, you could prevent a crash.
- Concentrate
- Plan out what you do before hoping [sic] in a car with friends. Either call a taxi after a party or stay the night or whatever to stay alive.
- I think it means take time to think of what you do before you drink to stay alive.

August 18th 1997

- Have 5 minutes rest before you (drive?) so you can think about what the road rules are.

August 22nd 1997

- Take $5 and take a taxi home.

Appendix J: Researcher diary excerpts

Sample Excerpt Researcher Diary 1: Early in Implementation 2.

July 21st 1997: School A: 10.35 am. Students Present 21 B=12 G=9

Setting:

Upstairs Classroom of Nelson-Style Block. DE class now relocated from prefabs on perimeter of grounds. Refurbished for the purposes of the Driver Education Teacher.

Magnetic White board at the front of the classroom, Teacher's desk at front right (viewed from the back of the classroom). On front wall (RHS) above the teacher's desk facing the class is a permanently placed video player and screen. Exit doors (2) are situated at the front LHS of the classroom, One on front wall one on the left wall.

At the back of the classroom there have been storage cupboards built to house resources and an IBM computer.

Desks are arranged in 3 rows facing the front and are grouped in pairs. (This is a major improvement from the previous classroom which had large tables around which students would sit and encouraged talking with some students with their backs to the classroom.

First Lesson began with me introducing myself as a full-time University Student making a study on young drivers and driver education. Indicated that I need to know information about them as they began to gain greater confidence as new drivers and drivers to be.

I handed out the questionnaire - there were 25 in the class of mixed gender.

The classroom teacher is organised to be present during each period although there are times when either of us will not be in the class because of other engagements.

Students were given assistance with the layout of the questionnaire.

The first section was a series of boxes which required them to provide information and further details where needed. There was a mixture of open and closed questions.

The second section contained open situations which students had to translate into personalised imaginary responses where they shared the feelings that they could imagine having in the situation described, what they thought were the main issues being discussed, what action would they possibly take, and if it was applicable to imagine what a parent might do under the same circumstances.

I demonstrated one example on the board where they were to imagine the feelings they would have, knowing that the truck and trailer unit behind them which was tailgating them as they maintained the speed limit, and what actions they would take. I also explained what I wanted in terms of ascertaining what the issues might be emerging from this. The idea of issue was obviously complex for them to understand - possibly from the point of view that it was an abstract term. I simplified this to mean what was the example or topic really about?

The class did not find the questions easy to answer. Many students would omit some information. The second section was not easy for them to understand and

consequently did not give the type of answer that indicated they understood what was expected of them.

Both the CR teacher and I worked alongside the students to ensure that the answers were essentially their own work and that they really could understand the questions adequately. Some students were from a limited ability class and some were recent immigrants whose powers of understanding appeared to be limited and their use of language restricted by lack of adequate vocabulary.

Students handed the scripts in and were told that they would get an opportunity to complete them the following day.

July 22nd, 1997; School A: 2.20pm Students Present : 26 B=17 G=9

The class contained four more students there for the first time. While the questionnaires were returned to the students to finish the scenario section, the new students were given the task of filling out the questionnaire from the beginning. My task and the teacher's was to ensure that students who had missed items from the first attempt were completing them, while assisting the new students to complete the questionnaire from scratch. The gender mix was weighted towards the boys by close to two to one. The cultural mix shows 14 of European descent, 7 Maori and 4 Asian.

The lesson did not progress far because of the staggered progress class members had made on the questionnaire. Realising that the students were getting tired of the intensity of having to sit there and think for themselves I asked them to hand the sheets and they could be finished the next day. In place of that, for the last 10 minutes, once the sheets were returned, I prepared the class for the analysis phase of the programme. I asked them what they understood was the meaning of the word *analyse* so that we could construct some statistical understanding of the nature of NZ's RT situation. I then read to them an incident of road trauma which had happened at the beginning of the month concerning a cyclist who it seemed had been purposely knocked off his bike after midnight in Chch. Having sustained serious leg injuries, he had been eventually fixed up and was pleased that no broken bones or internal injuries had occurred. He was going to be scarred for life as a result though. While the bell went terminating any further discussion, the change in dynamic was more interesting than finishing the questionnaire. I planned to refer and begin the following lesson with the factors in this story. With subject headings, Vocabulary, Factors, Age, Gender, Responsibilities, Statistics July - August, Knowledge, and the word *analyse* would be explored much further.

July 23rd, 1997. School A, 8.45 am. Students Present: 21 B=12 G=9

Following on from yesterday, I still had to get some questionnaires completed. The CR teachers distributed them as I took the lesson on *Analysis*. I began asking the students the meanings of the words alluded to. They had limited ideas about meanings. As I mentioned each heading that we would use for the analysis, I displayed it on the white board with bluetack. The word *Vocabulary* elicited a response "*words*". " *A person has a "vocabulary*" was a further clarification. I explained that our task was to analyse particular daily newspaper reports of road accidents / crashes etc to discover clues to their causes. The next word I asked about was *Factors*. To the question what is a factor? How many people didn't know, at least 8 people did not know what a factor was. I explained that by hiding the last two letters, the word fact might give some answers. Eventually they were

able to work out that a factor had to do with something that was real or in the case of a crash, a factor might be something that contributed to the crash.

I then put up all of the other words across the board and planned to add details under each word that would show how we could glean understanding from the words of the newspaper report. To refresh their memory, I asked them to recall under the headings the details of the accident we had discussed the day previously. Someone had remembered that it was a hit and run, it happened after midnight, it was a guy on a cycle, and one remembered that it was cold. The weather (frosty at the time - because I was there) had assisted the victim by stemming the flow of blood. Gradually we were able to see how the information could be aggregated from the stories under the headings provided.

Once they had understood this, I read a new account relating to a tragic crash in which a whole family (bar one who was absent) was killed in December 1995.

Under each of the headings the information was added.

Vocabulary	**Factors**	**Statistics**	**Age**	**Gender**	**Responsibilities**
factors	concentration	car/car: Death	9	m	innocent pass
analyse	alcohol	car/car: Death	11	m	innocent pass
causes	speed	car/car: Death	45(guess)	m	driver (?)
	seat belts	car/car: Death	43(guess)	f	innocent pass
	concentration	car/car: Injury	51	m	driver (?)
	time-season	car/car: Injury	37	f	innocent pass
	time - day	car/car: Injury	12	m	innocent pass

Wide ranging discussion was supported by anecdotal evidence which helped students to unravel the pictures in each story (e.g. I alluded to a personal story of being a tourist in Spain and driving on the wrong side of the road and nearly having had a head-on crash; also alluded to honey-moon trip when a bee flew in my window and lodged between my back and the drivers seat; I alluded to truck driving as a student with the windscreen open and driving into a swarm of bees - wearing just shorts; I alluded to the most recent fatal smash involving a honeymoon couple and former MP Matiu Rata.

In addition questions were asked concerning the speed of crashing at 50kph and increasing that to 100, then the combined speed of 200kph in a head on situation.

This lesson was teacher led because the students haven't been issued with diary books yet. The following sessions have been designed for students to be less directed from the front to become more group and self stimulated.

The behaviour of the students appears to be less antagonistic than the previous class from the school. I wonder at this stage how this might transpire later on during the course. Hopefully there will be an improvement.

The following lesson is designed to plan the diary record keeping then I plan to introduce them to the purpose of the course i.e. the intent of the researcher to have them become participants in a driver education programme. At the moment no one has asked me or the teacher why I am doing what I am doing. This will be explained to them at the next lesson.

July 24th, 1997. School A: 11.35 am. Students Present: 21 B=12 G=9

This period corresponded with seeking and gaining of (ethical) student approval for actively participating in this research. One student wondered whether the contents of the page was another test! (Is this another one [test] sir?) The contents were read out and clarified for them to ensure that all students understood what was being asked of them and what they were being asked to do. I also gave them the chance to ask any questions about the course and what it might mean. If they did not understand anything they were given the task of asking for clarification. With no further questions, I asked them to sign the sheet and collected them in.

It was also the day we (DE teacher and I) were to issue them with their diary books in which lesson materials/activities were to be recorded. In preparation for this I had specified that the books remain the property of the school and should be kept in a condition that was respectable. I explained that the function books were to record ideas from the lessons, in turn enabling me to understand their ideas from their perspective. They were to put their first name and code number on the book for identification as I would be taking them in each day to record the information they wrote each day for my records. Once the books had been distributed, I then gave an outline on how the layout would be organised.

Having mentioned the purpose of the course, the first task was to analyse what was happening in our country (New Zealand) in terms of road safety. Part of the task was to locate details of current road crashes from the newspaper, and allocate the information into categories for statistical analysis. This was a new activity (from the previous implementation) because I believed the students needed to find some answers for themselves about the problems on the road. Previously, I had hoped that the students *might believe what I was telling them* from my experience, and having heard it *might be prepared to accept it as realistic and reasonable.* From their perspective, as an oldie, I didn't have the credibility that peers of their own age had in terms of influence. My safety goals, knowledge and experience were collectively insufficient for their approval. Because of their previous reluctance to accept my knowledge and experience (re road safety / DE) I felt an alternative strategy was needed.

Therefore, I arranged to present them with the reality of road trauma as portrayed daily through the media. I hope that with reference to specific incidents they could see the dilemmas and problems without being pressured into necessarily accepting my perspective. In another sense by telling them or giving them the answers, I was denying them the chance to solve problems and make decisions about matters of road safety and road user behaviour which they needed to be able to do later on anyway. Such a stance allowed me to consider the role of devil's advocate as well - hiding until later where I stood personally. As a result of this thinking, I included a daily analysis exercise of road crashes for them to build up a picture of the reality we faced at a national and regional level. When this analysis was matched with an activation process involving them taking roles or perspectives from the crashes concerned, I gave this strategy the term *Reality Activation.* The use of the term highlighted the *reality* of road trauma and safety in NZ while the *activation* component from having the student personally involved in finding out through several activities what the reality meant, what information could be gleaned (if anything) and what responsibilities there were for us as a community knowing this information.

Reality activation meant that the students were being empowered to consider their world, to take responsibility for it and to do something about it. In terms of this analysis activity, which was different from last time, they were now to *analyse* the reports of road safety in the newspapers themselves (or in groups) and extract from the reports themselves key factors required to learn more about the risks involved in driving or being a road user.

Two other changes from the previous programme needed to be understood in terms of this research. They related to *classroom layout* and the need these students had for higher levels of personal support and reinforcement.

The resited DE classroom contained desks facing the blackboard. This meant that students were focussed toward the whiteboard at the front of the classroom. In the previous classroom, students sat in friendship groups around large tables on high stools facing each other in threes or fours. Many kept their backs to me as the teacher. This was a problem for me as I felt that when I asked for their attention and cooperation to face me when they were speaking or I was addressing the class, they reluctantly made the effort (often under duress) to turn around. I felt as if they resented me imposing standards on them that they were not happy about. There was a reluctance to comply with such requests and time was wasted as I waited until they were ready. With the desks facing forward and in pairs, it seems already that inter-group discussions have been minimised and the student focus and attention is placed more on the work being undertaken at the front of the classroom. The improvement in behaviour has made the class room appear less restrictive.

The second change came about from a reflection process. I needed to analyse more accurately the process of learning from the students' perspective to see how I could achieve less student resistance. I needed to consider how the course might be more simply organised and improved - not necessarily to introduce new content but work out how the content could be presented for the learning to occur more effectively. The reflective process allowed me to develop the following checklist concerned with teaching and learning. It involved three main elements. The DE content, the teacher input, and the student learning process.

1. DE Content: I realised that most DE research seemed to rely on summative (safety) outcomes from DE programmes but this was too narrow for my need as a teacher to improve learning for students. Road safety information (DE content) could be organised into:

   • Structure - (the long term overview of the direction and topic organisation).

   • Content - (the specialist information which was to be taught).

   • Activities -(the way in which the learning experiences of the students would be organised to allow them to assimilate the content and structure into a meaningful experience)

From a teacher's point of view, I needed to find out whether learning had occurred which involved me in forms of assessment. Assessments (measuring the way in which students had moved from overcoming their lack of knowledge) were varied and numerous. I explored the responses to questionnaires at entry and compared them at the conclusion (summative outcomes). Other assessments were *formative* (using work samples done from day to day using different forms of qualitative data). I could assess whether individual students were showing improvement using safety - risk continua.

2. Teacher/Trainer: I could see that the task of the teacher/trainer could be organised into four roles.

- Planner - (*manager* organising the teaching content according to the structural and content plan as well as the activities and assessments).
- Person - (which included the personality of the teacher and the inter-relationship between class members and would seem to include the role of regulator etc).
- Professional - (which acknowledged the credibility of the provider to implement the programme. Within this role the professional's experience, and DE knowledge and skills were important).
- Researcher - (As a researcher I could examine all factors involved with teaching and learning including strategies for more effective instruction.) I could monitor my own performance and improve the delivery of the programme for safety.

3. Students: as the most important focus for DE, I carefully analysed how students acted and reacted and how they learned. As I got to know their learning needs better, the quality of instruction improved, as did student behaviour.

Having developed this checklist, it was possible to consider potential constraints objectively and once identified, consider how they might be minimised.

The resultant changes were:-

a) I formalised the programme more by developing the *PDE Text* book as a guide for programme presentation.

b) I put more emphasis on the structuring of materials for students to process individually or in groups.

To assist this process, I prepared the following.

- A checklist of headings for RT analysis (statistics, date, status, mode, factors and comments).
- Introduced sample items of reality from the papers to analyse as an exercise.
- Planned to have a vocabulary section in the middle of the book (introduced first words), factors, mode, status etc.
- Planned to use the newspaper articles to stimulate the student's knowledge of the road code as well.
- Summarised the whole content of the programme on OHT as a checklist of the content for summary purposes and as a means of reinforcing the content via a 3D model of the driving task developed during the first trial.

<u>July 28th, 1997. School A. 10.35 am. Students Present 21 B=12 G=11</u>

(Two new girls arrived who did not have books).

As the class had worked with the CR teacher on the Friday for half the period, I went over the work that had been done - also a chance to ensure that the students were up to the same level of understanding of what the analysis process meant and how to set the work out for ease of understanding.

We analysed as a group the crashes which had occurred recently. These are recorded on a spreadsheet for accumulation.

The students were showing an enthusiasm which was more positive than the previous implementation. However their thinking processes are fairly basic and what I would call low level - they will only provide one answer which they could possibly think (according to the DE Teacher this means I have done my bit and that's enough). It was interesting to note when the book was given out that students were not all on task with page two as was suggested. Some were perusing the content to see and discuss with neighbours what might be interesting to talk about.

Some students were coping well in developing the skill to analyse crash scenario on their own. However, I needed to check and personally coax some students into action. More than once I had to ask whether two boys had been issued with diaries. Two hadn't but had not requested them either. To them it was more a case of *if I haven't got a book, I don't have to do the work.*

In this implementation I don't feel that many students have come with a real commitment to the classroom learning task. It is almost as if they are there by default - as the line of least resistance. It may well be a fact that students end up in this class because they don't want to do the other subjects at that time for one reason or another. It puts a certain amount of pressure on me to check this out and see whether the students can get the message that they are capable of doing this and will succeed at it.

We analysed together some crash scenarios and found the following factors may have contributed to crashes.

Factors: Time, Weather, Seatbelts, Speed, Tiredness, Alcohol, Vehicle.

As can be seen, no mention of human factors has been made by the students. This is quite critical because of the high proportion of crashes which have been attributed to human factors but it is not easily recognised by the public. While external (environmental) factors have an important part to play in safety, it is the *decision making process* or the *actions* of drivers that result in crashes occurring with people being injured and killed.

Points of interest in this lesson included one student who had very quickly analysed (after mentioning in a previous session) under comments of two 19 year old female victims killed in a crash (car x pole) that one was an

- inexperienced driver and the other was an
- innocent victim.

This is interesting because it is the beginning of a realisation I hope that will continue that many victims of RT are in fact innocent, and that the statistics will show that many people are innocently killed or injured than people would realise.

I believe it also is a realisation that lies dormant when other things are considered. In the comments of the next story in which 4 people had been involved, with 3 killed and one injured, no one (including me) had added this information (innocent victims) until I was reflecting on the statistics on the board and asked the class what piece of information was missing from this crash information that we had talked about on two other occasions. Finally someone realised (the innocent victim thing) that a driver had made a decision which had

killed not only himself but also two others with the fourth being injured. The plight of passengers is planned for later on in the book but once again it will be interesting to note whether some of the students actually pick that message up before we reach that section.

The lesson finished by distributing the diary books for the students to make a start on the exercise of analysing the crash information from some recent 1997 motor crashes. I realise it will be quite an exercise to maintain for all students a similar rate of progress. The reality is that some will achieve far more than others. It will be a task of mine to ensure that I can keep everyone motivated at their level and that the requisite material can be covered. Already time appears to be running away from me. 5th session and onto page 2 of the material. I do believe that the work could not be hastened any further and that it was important to set the structure and the expectations of the teacher (researcher - me) in place before hand. Once this has been achieved then the work can proceed. Its almost as if you have to establish your persona with the students to make them feel comfortable and give you (as the teacher) the opportunity of interacting with particular students and finding out where their limitations and strengths lie. One student seems to be very slow at answering things and another girl (Asian) is finding difficulty with the written word. I may have to ask students to identify their need for help and encourage them to do some of the work with me more closely.

Sample Excerpt Researcher Diary 2: Early in Implementation 2.

Diary of lesson: July 29th 1997. School B: 11.25 am
Students Present 10 B=10

Setting:

Prefab classroom near the Gym. Desks in pairs facing a white board and teacher's desk at the front. OHP on moveable table to the left front of the white board. No class work on the walls, with windows on both sides.

Boys were seated by the time I had located them (I had arrived before them and had waited with the CR teacher who would not be present during the lessons. Having not arrived, I went in search for them but missed them en route.

My first question was to ask them had they been told anything about the lessons[27] that I would be conducting and how they were selected. They didn't know anything about it except that it was meant to be a course which would eventually lead them to receive credit for the course as a defensive driving course (designed to shorten the length of their restricted licences by 6 months to a period of one year in total). This programme would only run for 7 weeks, so I explained that Mr McK would take them following this programme for a D. Dr course which would give them the credit towards the licence reduction.

I then explained the purpose of the exercise. I told them I was a fulltime student at the university, researching young drivers and drivers to be to gain ideas from them about driving. In order to do this, I required them to answer some questions on sheets provided. I went through the guidelines carefully, then the boys began to answer the questionnaire. I explained the procedure in Part 2 which gave them some scenarios to respond to, outlining what they would do under the particular circumstances described.

One boy had his full licence, several had their restricted licences and a couple did not yet have their learner's licence. One boy appeared to be much slower than the rest and using him as a guide for progress during lessons, I stopped everyone when he had reached the end of the first section. One of the key problems to arise in the questionnaires was the varying speeds at which students worked.

Once I had collected the papers I discussed implication within the *Invitation to help with the research form.* I explained that the form was prepared for their protection against me contravening ethical principles concerning their confidentiality and personal welfare. I explained that the intention of the course was to look at driver education, using a different approach, to see what methods, tasks and activities were effective for DE. Once they realised that they were not going to be disadvantaged by being a part of the course, they were much happier and appeared to look forward to the next session in two days.

The interesting thing about this group was I was only to see them twice a week for seven weeks rather than five times a week with the other group. They were a

[27] This meant that they had not been informed of what I was doing or had planned to do. I realised that this could have been a bit of a shock, therefore, reassured them that they would not miss out on the driving experiences being given to the other class (on a two up or three up basis where a driving instructor sits alongside students who already have their licences for hazard perception exercises).

smaller group (10 instead of 25) were a year older, (mainly F6) and appeared to be more able academically[28]. Over half the class were European, 6 with Maori Polynesian 3 and an American/Persian. 7 had either restricted or full licences, and the remainder (3) had no licence yet.

Lesson ended.

Diary of lesson: July 31st 1997. School B : 2.25 pm
Students Present 10 B=9 (one withdrawn - expelled)

Today's session began by having the students head up the diaries which I had given them as designated on the board. The purpose of this was to tabulate the stories from various sources and analyse the statistics of involvement. Once this was done, I gave them a sample article which we then analysed together on the board, with them copying the results into their books. After a while they got the idea of the exercise and were quite interested in the way statistical patterns were coming into a picture. As we went through each incident, I was able to ask them about pieces of information which were not present e.g. while a car was described as having left the road, the implication was that something had gone wrong (what had occurred). It was this type of (sometimes speculatory) information that they began to find quite interesting. In one incident the car involved in the crash was stolen, the time, after 7am in the morning, seemed to be much more important. –"that he had probably just done a job and was fleeing the scene".... As we went through other scenario from the DE book, (p.2) we found that the information not provided was just as important as the information, which was given. It was too easy to just accept that a car had slid off the road[29]For a car to do that there needed to be some factors which would have contributed. The boys could see that speed was likely to be a factor. Other factors like alcohol and concentration were mentioned as well.

As there was quite a bit to summarise on the page, including the definition of key words, (in the vocab section created in the middle of the book) there was not time for students to put their initial impressions down in their books[30]. I will ask them to reflect on the matters discussed at the beginning of the next lesson.

Books were handed in. The pace of the work we were doing held up well with this class in spite of the fact that it was the last period in the day. It was surprising when compared with the other school. It was also manifest in that the students were on task for most of the period[31] and didn't seem to get distracted by the book,

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[28] I had found in the previous year that the School B students would be easier to relate to, had a stronger work ethic and progress was more rapid.

[29] this was a type of reality activation process of exposing the factors likely to become involved.

[30] The pressure of time in this implementation was greater than the previous year – 14 hours down from 40 hours. It meant that I had to plan to omit certain tasks or activities so that there was a sense of continuity without too much pressure being exerted and turning them off.

[31] These periods were an hour as well. The attention paid by students was noticeably more intense and the duration longer than the other school – possible factors, smaller class & more intimate student teacher relationship; more mature students a year or so older; school culture of academic discipline and achievement; students could appreciate the inherent value of the study and make more long term connections with a global picture of traffic safety (i.e. – were less egocentrically motivated or more sociocentrically motivated).

which I handed out with all of the lessons prepared in advance. I think that in spite of the shortness of the period of time for the course, I think at this stage their completion of the course will be much faster than the other school[32].

Diary of lesson: August 5th 1997. School B : 10.35 am
Students Present 8 boys. Absent =2[33]

This session began with a reflection on the statistics to see what patterns seemed to be emerging after one session, The boys had picked four main things. Males were high risk, so were youth, alcohol was involved and passengers[34] were involved quite surprisingly. The second task[35] was to play the tape of Kevin's sentence to convey to the students the issues that can arise from a combination of alcohol, speed, and youthful showing off. I prepared two questions that I wanted them to answer based on the story then to imagine[36] the scenario before and after the accident. As the boys class is smaller (than School A) the boys are older and the period an hour instead of 50 minutes, the progress appears at this stage to be faster. The boys presented good work in the summary sentences and the imagination was realistic. They could identify with the sense of action:

- *If I was him I would feel like showing off because I was a bit drunk.*
- *Full of life, excited.*
- *Feeling happy and in a good mood. My thinking would be a bit out of control and I would not realise that I was getting out of control.*
- *If I was K, I (would be) ready for action.*

One student having realised his condition showed he would try and get away with it and take steps to slowly and inconspicuously drive home.

- *I would notice them because I had been drinking. I would slowly and inconspicuously drive* home.

The next section showed quite an apparent sense of guilt in that feelings of self-pity and remorse were expressed in different ways.

- *I would feel like shit. I would feel like killing myself.*
- *Shocked and upset.*
- *I would feel like killing myself as well. I would feel so bad as I have caused all of it especially seeing my two best friends dead along with the pain their suffering family would feel.*
- *Very pissed off, shocked, very annoyed, pretty much unspeakable thoughts.*
- *I would take off and never be seen again.*
- *I would be extremely annoyed about what I had done and the fact that I have to live with what I had done.*

[32] It needed to be if we were to cover the range of topics that I thought would be necessary to cover.

[33] Absence was noted as consistent element with DE students in both schools during the previous year.

[34] Passenger statistics are revealed early on in crash analysis exercises. It is surprising that there is not more done to highlight this fact in public traffic campaigns.

[35] I found that I could do several activities in a period with this group because there was less time wasted. This also helped to break up the longer hour periods.

[36] Reality activation exercise.

I was encouraged by these comments as each student consistently showed some level of concern and remorse[37].

To end the session, I showed the students an article in their DE book about one of the visitors I was planning to have visit during the next session. I asked them to read it quickly and consider what questions they might like to ask. As the bell went few of the boys were able to get the exercise done. I said we could pick up the activity during the next session.

Diary of lesson: August 7th 1997. School B : 10.35 am

Students Present: 4 boys. Absent =6[38] (the other DE class joined in the exercise when they knew that there were two visitors (survivors) present for the session). Total students 18.

As I had prepared my students in three sessions I mentioned to the new class that I would want them to consider asking the guests questions to which they would only answer yes or no to begin with[39] to build up the profile of the crash, the people involved and the outcomes ie how the guests were involved. To assist them in this practice I showed them (visiting class) the [crash analysis] schema I had developed [for students] to find out details and build up our statistical base. These headings were first explained and put on the board while the [crash survivor] guests sat at the first two desks awaiting to be introduced. Once that had been explained I introduced them both - Sonya and Susan - and invited the boys to begin the questions. I recorded the key words from each question with the positive or negative response next to it. These were the responses:

Did anyone die? x	was alcohol involved /	were you the driver? x
had the driver been drinking? /	aged between 15-32? /	were you the cause? x
was the car stolen? x	was the driver male? /	was speed involved? /
was someone showing off? x	was weather a factor? /	was it at night? /
was it autumn? /	were you in the car? x	was the car at fault? /
was it in the city? /	did you suffer injuries? /	
was some one distracted /	did the car stop afterwards /	
were you pedestrians? /	did it come out of nowhere /	
were you on the road? /	did someone run red light? x	
were you on a crossing? x	there was no other car? /	only 2 involved? /was
the driver licenced ? /	was he unknown to you? /	
was the Dr under 20? x	survivors dr. alcohol? x	was anyone killed? x
was the car warranted? x	was it registered? x	
was he wearing a seatbelt ?	was the Dr European? /	did he veer to you? /
were you on the footpath? x	were you in middle road? /	

[37] I was interested to note that some students who were prepared to accept responsibility for their (imagined) actions acknowledged the affective domain.

[38] It was situations like this where over half of the class were absent that I found frustrating. Not only was it the chance to see and hear the unique stories associated with road trauma but the educative process was missed as well. It is easier for people to become emotionally involved in stories of tragedy faced with the victims who have suffered in real life situations.

[39] This teaching strategy had surprised the DET and me in School A and I wanted to try this out again with students in School B. As an open activity, it relied on students cumulatively aggregating information. School B students were better able to handle this type of task than students from School A.

were you on an island? x
was the street well lit? x
was it Fri or Sat? x
were you on a median strip?/ was it in Hamilton? /
did he do it on purpose? x
was it a straight road? /

By this time they had got most of the details of the crash confirmed and as the two guests indicated, did very much better than the class at School A. I asked the boys what picture was emerging before I handed it over to the students and the guests to ask and reply to specific questions. We collectively summarised that:

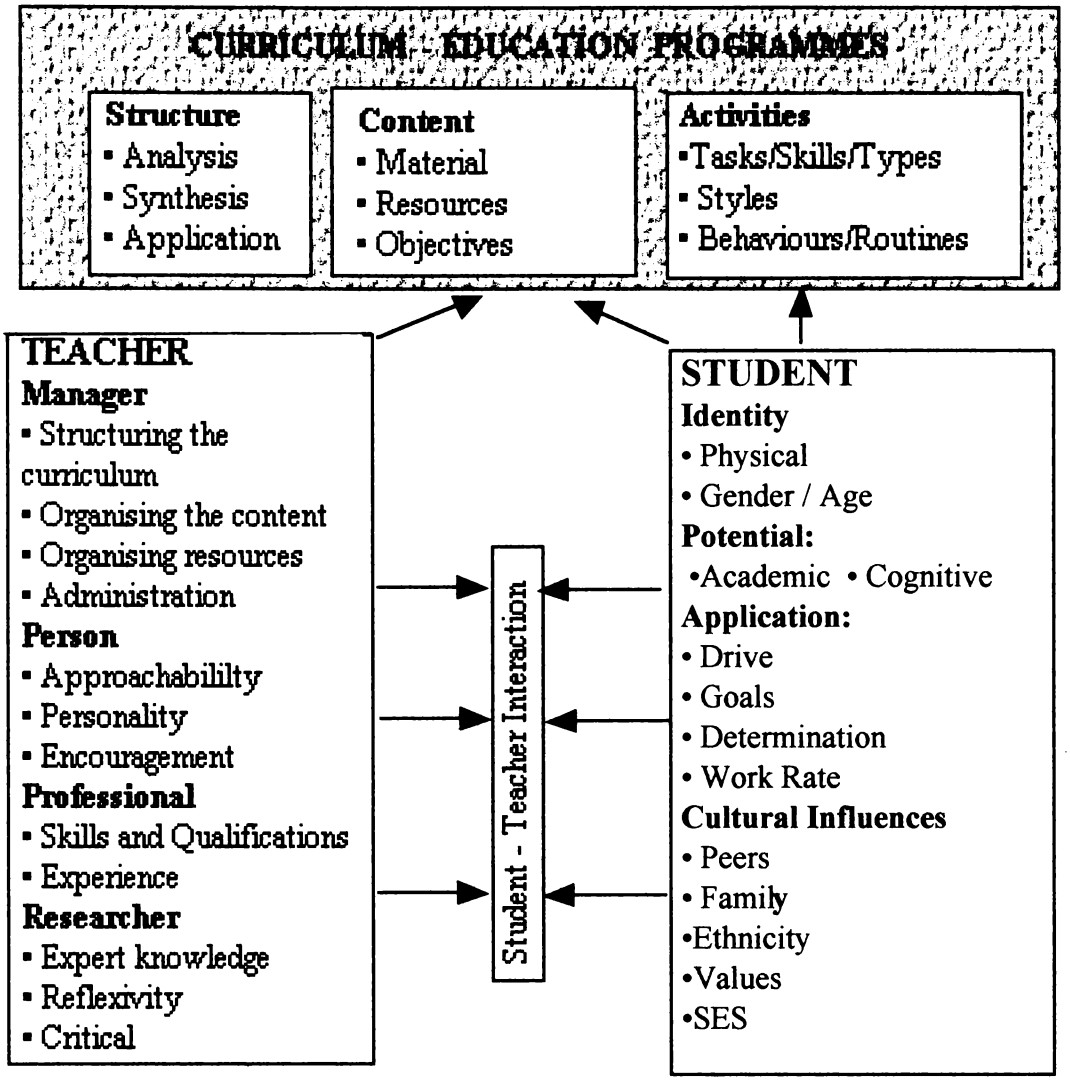
It occurred at night, vehicle factors (wof and reg) were faulty, and human factors (alcohol was involved + some speed was involved), in an urban environment and it involved innocent people.

I did ask why the Waikato was the worst area in the country. One student replied that people were too impatient. Once Sonya had told them of her situation, and Susan had mentioned her story, I mentioned that I had killed someone on the road and wanted them to suggest whom I might have killed. Having at first suggested that it was a child and then perhaps a member of my family, they jumped to the next most likely idea; a teen male. I then confirmed this adding the details, which continued to stack up to making a consistent story of [human beings making] bad decisions, which will need to be worked on in future sessions.

Details included...Male, 15 years, x wof, x reg, x helmet, x lights, wrong side of the road, x licence.+ pillion passenger.

I finally read them the story of Kate Shaplin as described in the PDE Text book. Which included a list of things, which Kate had written out last year saying she was not able to do. It was like a blue print [of the tragedies of other innocent victims] So many things were similar. The task for the next session will be to work out with the boys their impressions from the session.

Appendix K: Checklist of Teaching and Learning Process



Appendix L: Questionnaire Q1c & 2c Student Feedback

Please complete the following Questions:
CODE NUMBER School Date
Over the last term we have covered many topics. Please answer these questions as a final summary so that I can consider whether the course has been helpful and has given you ideas to think about.

We found that young drivers generally have (1) and as a result are (2)
More (3)

is what is needed to prevent (4)

Many young drivers are just as safe and as confident as some older drivers but they can be influenced or distracted by many things
such as (5)

Even friends can (6) risky driving behaviour.
The people we have talked to, read or heard about, and surveyed, together with information provided in the course seem to suggest that bad habits are common to everyone and it easy
to (7)
To prevent unnecessary damage to vehicles, property and people, there are five simple things that I can do as a driver to make me safer on the roads. (8)

-
-
-
-
-

This project was an experiment to look at different ways of presenting Road Safety information to the young driver.

Comment on how you enjoyed the stages in the course which were presented:-

- Real Life Stories (Kevin's sentence, Newspaper reports)
- Special Guests: (Sonya and Susan, Interviewing teachers/ adults)
- Video Snippets:
- Driving task model:

How did you feel that the course went for you overall?

What aspects were most enjoyable?

What aspects were the least enjoyable?

What things stick in your mind mostly?

Do you have any suggestions to make?

Appendix M: Questionnaire Q2d Application task

Imagine you are personally involved in these situations. What would you do in each case?

1. A large truck and trailer is bearing down on you on the open road even though you are driving at the legal speed limit.
2. You see passengers in the car in front of the one you are driving, drinking alcohol - one vomiting out of the window.
3. As a driver you are approaching a recommended 65Km p h Collision Corner warning at 90Km p h.
4. In double lanes, you realise you have driven in behind an elderly driver who has stalled.
5. Three friends have called you up and want you to run them into town - you only have a restricted licence.
6. A driver makes an indecent gesture to you as he /she passes which you don't know what for.
7. Your friend is displaying reckless driving habits with too many unnecessary risks.
8. You find you have been drinking punch spiked with alcohol and are possibly over the limit - you are expected to have the car home in one hour.
9. Your friend on a full licence offers to take all 8 friends (including you) home after a party in a car built for only 5.
10. You are driving through the main street and a car four cars further on has right turn indicators flashing to exit a parking place. There are several cars following you.

Appendix N: Haiku Poems from School B

Mediation using the Arts **- Haiku poems written as a comfort to the remaining members of the Goodwin Family.**

Hearing your story
I feel sad for the tragedy
But life still goes on.

Losing family
makes life very dull for you
stay wise, life goes on.

Hearing your story
Made me think about loved ones
How they're so precious.

Being here today
I feel your sympathy but
live life to the max.

I know your feelings
that you are distressed about
but life shall go on.

I too have suffered
and lost people close to me
I hope you are OK.

We heard your story
about your tragic loss
We send our regards.

Words in the paper
we feel sorrow for the loss
We will pray for you.

I have sympathy
for you and your loved ones
Hope you're recovering.

I know it all seems black
My sorrow is with your loss
But it can only get better.

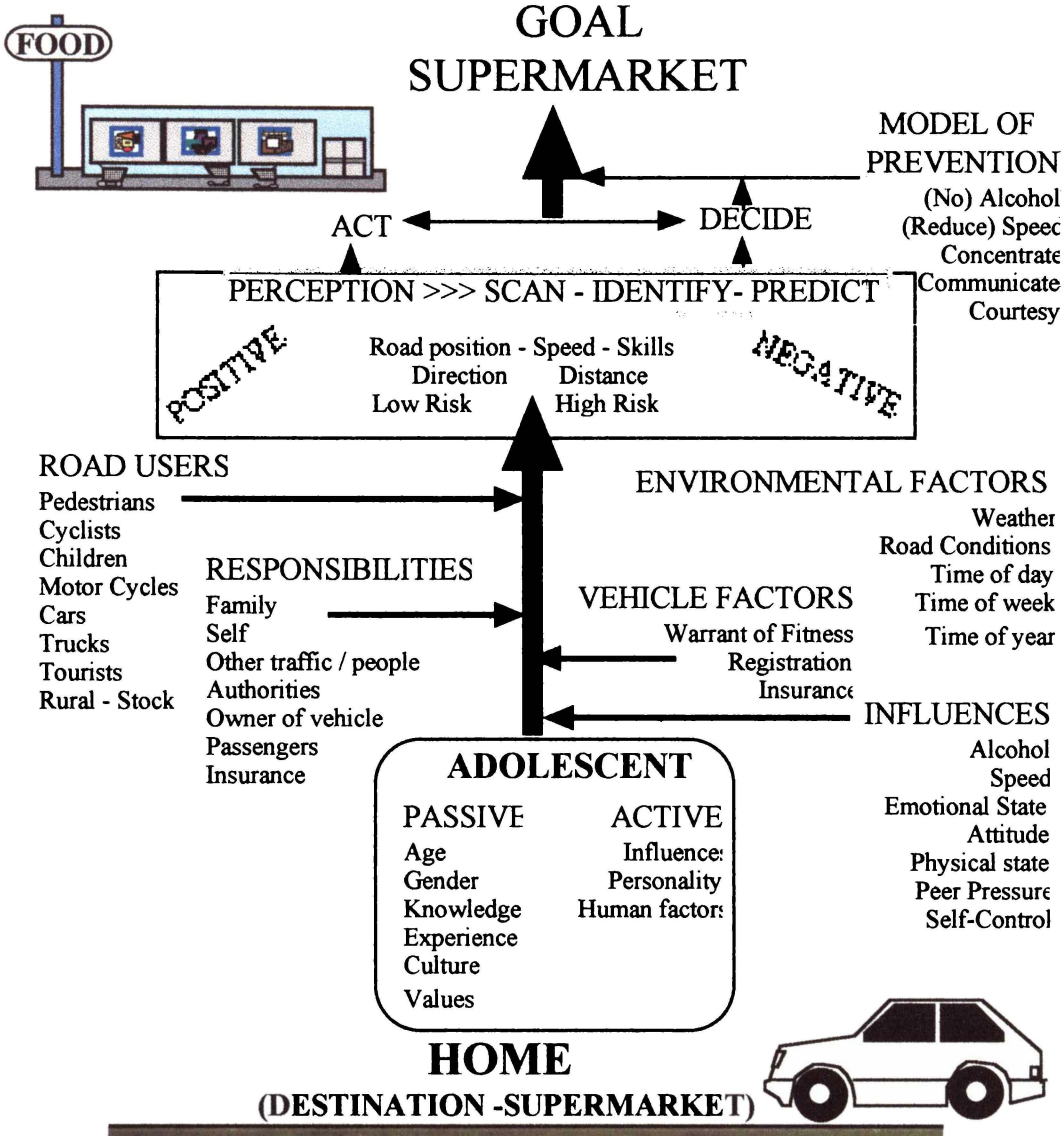
Hearing your story
I feel sad for the tragedy
but life still goes on.

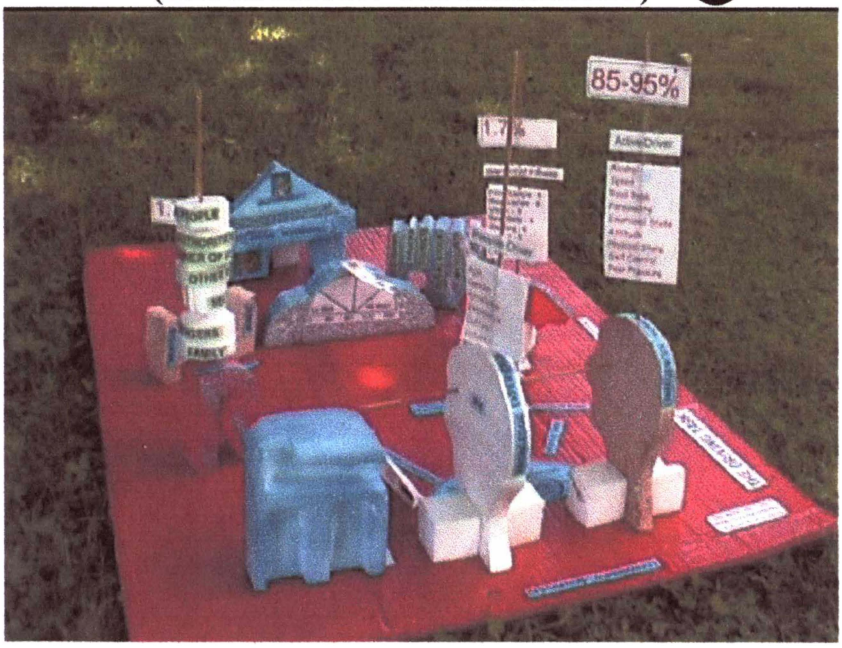
Being here today
is a special thing for me,
Hope your coping, regards.

I feel your sorrow
I understand your hardship
I'm really sorry.

Words in the paper
made me see your suffering,
As my eyes watered.

Appendix O: Two-dimensional overview and 3D model of the driving task (3DMDT)





Appendix P: Experienced Driver Survey

As some of the contributing causes of adolescent road trauma have been cited as *youthful over-exuberance*, *unnecessary risk taking*, and *driver inexperience*, this task was developed to allow students to listen to older and more experienced drivers to see what they had to say in response to eight questions. I was looking for ideas about *what driving is really like for them* and *suggestions they might make about how to reduce the likelihood of injury and death.* Following a classroom modelling interview, as a research exercise students were then encouraged to interview two adult drivers (family or friends) using the same questions provided. responses would be then be collated and summary statements provided.

Students could also ask some questions of their own.

ADULT DRIVER SURVEY:
GENDER: AGE:
YEARS DRIVING EXPERIENCE:
OCCUPATION:

1. What are the greatest frustrations as a driver you find as you drive? (2 or more)

2. From personal experience what advice would you give to a learner driver?

3. Describe any single event that taught you a lesson about driving?

4. Have you ever driven ands suddenly realised you didn't know where you were?

5. What situations have you been most likely to exceed the speed limit?

6. Do you think road safety advertisements on TV have effected your driving? How?

7. What three examples of good road habits would improve our safety on roads?

8. What examples of road behaviour would you classify as being courteous?

Summary Results: Experienced Driver Survey 1996

The main points to emerge from eight questions were:

1. The greatest frustration for drivers was *inconsiderate* or *slow drivers.*
2. The most consistent advice for young drivers was *to be cautious* and *to drive at a comfortable speed.*
3. The events, which taught drivers the most about driving were *environmental dangers, hazards, signs* and *signals* and *impatience.*
4. About two thirds of those surveyed had at some stage driven and *admitted that they didn't know where they were.*
5. Factors influencing people to speed occurred when *they drove on the open road* and *when they were late* or *were hurrying.*
6. Two thirds of responses felt that the TV advertisements *were not effective.* The other third *highlighted ACC* and *police advertisements* as being *the most informative.*
7. The most frequently mentioned good habits to cultivate were:
   - to drive to the conditions,
   - to keep to the speed limits.
   - to comply with road rules,
   - to be courteous,
   - to raise the licence age and
   - to put lights on early.
8. The main definition of courtesy included *letting people in, out, in front or through traffic at times.*

Appendix Q: Haiku poetry planning: Haiku poems for use in School A

HAIKU

The haiku is a simple Japanese Poetry form.
It allows people to express thoughts in very few words.
A HAIKU has three lines. 1 = 5 syllables
2 = 7 syllables
3 = 5 syllables
A HAIKU can express sincere thoughts to a reader

TRY THIS EXERCISE
TITLE RAIN
Complete Gently falling down
_ _ _ _ _ _ _

_ _ _ _ _

TITLE HOLIDAY
Complete Remember that time
_ _ _ _ _ _ _

_ _ _ _ _

ROAD TRAUMA affects many people, those who are strangers and sometimes those we know.

Try now and write a HAIKU which we can sent to the O' Hearn Family after the loss of Mrs O' Hearn last week.

TITLE
Complete _ _ _ _ _

_ _ _ _ _ _ _

_ _ _ _ _

Haiku: Mediation using the Arts

In Memory of Judith-Anne O'Hearn:
Personal thoughts for O'Hearn family from the Driver Education Class

Hearing, your sorrow
squeezing the hurt from my heart
feeling so helpless.

Hearing your story
made me think how life can be
so unforgiving.

I heard your great loss
and my sympathy's with you
remember good times.

Words in the paper
can't describe losing loved ones
but memories will live.

Hearing your story
I was crying for your loss
my thoughts are with you.

Being here today
living without your laughter
makes me want to cry.

Being here today
makes my thinking go astray,
All I'll do is pray.

Deepest sympathy
for the loss of your mother
who is sadly missed.

The struggle is hard
The sorrow shared by many
Look to the future.

Hearing your story
we share your sorrow a lot
very very sorry.

Words in the paper
can't describe her life at all.
You'll see her again..

I know how you feel
losing someone close to you
I feel the sadness too.

We all feel for you
You must be extremely sad
May she rest in peace

Hearing your story
I am overcome with sorrow
to know of your loss.

Hearing your story
makes me feel very saddened
I'm very sorry.

I feel your sorrow
sincerely in my heart
Deepest sympathy.

I feel your sorrow
I know what it feels like
we are the same as you.

I feel your sorrow
I know what it feels like
It is sad for you.

Loving person
with her own sense of humour
resting her loving soul.

Words in the paper
Making me feel very sad
Knowing of your pain.

Appendix R: Results of Questionnaire Q1b

1 *Is a licence important?*

- Important to know road rules; very important so you know road rules; very important because without licence you are inexperienced; so police are more aware of those breaking rules when not carrying a licence; important to get around / jobs / supermarket; very important because they don't know what they are doing; need to be aware of rules and dangers; very important with a licence as you become aware of road rules and hazards; agree (no reason); know road rules and are fit to drive.
- Important so they don't get caught by the police.

2 *What is the likelihood of being injured on the road?*

- Highly likely.
- Some most have accident and I have had 1; some possibility with other inexperienced drivers; some, maybe going with other fellas drunk; maybe through travel on roads in future through business; some not everyone gets killed or injured; maybe; maybe, possibly even as a passenger; maybe because I might be hit by a drunk.
- Not likely because I will try and keep out of trouble; some, not likely.
- Because knowing me I would D&D.

3 *Is it alright to drive and drink if you have no passengers?*

- Disagree with earlier stance x 13;
- The statement was mostly true x 2;
- OK if not carrying passengers.

4 *Are seatbelts that important to wear?*

- Yes x 10;
- Two conditional (always in front and sometimes in the back; sometimes important).

5 *Is it alright to abuse other drivers that get in your way?*

9. Disagree; disagree always be courteous; disagree; disagree; disagree; disagree;
- Sometimes; only sometimes; sometimes; only sometimes
- Agree.

6 *Do you agree with courtesy?*

- Agree; agree; agree; agree; agree; agree; agree.
- Sometimes agree; sometimes; sometimes, sometimes; sometimes agree.
- Don't agree.

7 Was the course of benefit to you?

- Yes it was there was more to driving than changing gears; yes; yes taught me what to do in situations e.g. what if?; yes; safety precautions; road factors, driving and road rules; yes I did get a lot out of it; yes; more aware of dangers of driving; yes - what to expect in driving a car; common sense ideas all round better way of thinking.
- A bit but not that much know rights and wrongs.

8 *Is the situation with young drivers serious?*

- yes-young males are heroes when they get into cars; serious-many drink and drive with poor concentration and do illegal things, serious young not educated enough and don't get the message; serious too many examples of trauma; serious many are more reckless; serious because they live for one thing – speed; serious too much macho image especially in 1990s with boy racers.
- Average because they're only statistics and can't be proven; average; average; average as there are always dangerous .drivers

9 *Is it everyone's duty to do their best?*

- Yes - best x 10,
- Sometimes.

Appendix S: Results of Student Feedback Questionnaire Q1c September 1996

- Most students enjoyed video excerpts because they were informative (2) and they were good to watch (14). One student who noted that the realism of the results of crashes shown in video excerpts were "not easily shrugged off" made a suggestion that more in-depth programmes should be available.
- *Real life stories* connected with *reality activation* exercises were regarded as "interesting (3), exciting, and good to read about". What some students recalled in particular was the perspective of the survivor (what they said was quite interesting) as it helped them to "learn a lot of things" and "learn some things they didn't enjoy (because of the trauma attached)". Two mentioned the story about Kevin while others indicated that real stories provided a personal connection, which was "interesting as anyone can have an accident". Others felt that the stories "made me think quite a lot about drivers"; and had a particular impact because they "were real and had meaning". One student captured the essence of real or authentic stories recognising that " stories have emotions (that have) more meaning than just facts".
- The *visits from special guests* to the classes were memorable for students. Fourteen students indicated "they were good, exciting and interesting". Students who had made a personal connection with the trauma gave more detail. One felt apprehensive when acknowledging that you were "not secure even if on a pedestrian crossing". Special guests "informed us of the physical and mental effects of their accidents; (and it was) interesting to hear how they felt about accidents and the emotional effects they had for them". For another, "what happened had impact on me, (as it) demonstrated what survivors went through, they must have had guts". Other students acknowledged the impact real stories have, "seeing and hearing stories have much more impact" and, bearing in mind the trauma, "it was helpful to see the side effects that people deal with". Kate's tragedy influenced one student to say she "should have looked both ways, (her accident) made me think seriously about crash results".
- The *driving simulation exercise* designed to assist students with learning the *Road Code* was mostly well received. Only four students felt that it was a waste of time or was boring. Positive comments showed that the exercise "taught something of real situations and was interesting as I hadn't ever done that before; made us think about our roads and how to use them; was very helpful and gave clearer dimensions". It was good for some students who felt that they could practice driving on a traffic grid without the fear of something going wrong and being injured. One student appreciated the "good hands on experience with some driving skills" but another added, that it was "interesting but nothing beats the real thing".
- The *experienced driver survey* was generally regarded as a good experience. The students acknowledged that "more experienced (people) can often drive better" and it was good to "find out what older people think". Some appreciated that "different people had a lot of different ideas" and that it was "good to find out what people thought". About 6 students were not inspired by the task.
- The *3DMDT* was my first attempt at designing a three-dimensional model and putting abstract ideas into a concrete form. It was clear that some students did not understand some aspects of this though. In School B, the models students were developing could not be finished because of the time required for

complete them. Apart from students who mentioned their disappointment at not finishing the task (5), others thought it was fun, good (x2), and interesting being "able to put on a diagram what the course had (covered)". Four students in School A thought that it was boring but others were more positive. They felt that "it explained (the course) well; it was very helpful and gave clearer dimensions (of the course); and it showed exactly what driving has involved in it".

- I asked *whether students found the course helpful* and found that apart from two students who had not found it so, the rest were positive about its value for them. One student acknowledged that it was "pretty good! Even though I have got my licence I still learnt things". In a similar vein students agreed "I learnt a lot about Road Safety and other things; I took in a lot; It was really good I really learned a lot (2)". Two students mentioned getting their licence was a highlight for them.
- *A wide range of enjoyable aspects of the course was noted.* In School A, five students mentioned go-karting even though the questionnaire had been completed a day before the trip had occurred. In other cases students highlighted a full range of activities, "driver simulation/road building (5), videos (5), trips/excursions (4), special guests (4), interviews, getting a licence (2), driving task model (2), my singing / arts session and a warrant of fitness exercise". The stories were memorable for some and Kevin's sentence (2) and Kate's interview (2) were specified directly.
- *The least enjoyable aspects* centred around writing (4), the haiku exercise (in School A; 2), teacher talk (in School A; 2), and a number criticised videos, the driving simulation exercise not being completed (3) and too much of an emphasis on safety.

Appendix T: Article as PDE Text support materials: Victim's personal account

Sentence For Life – by Sonya Daly

On a dark Hamilton night, three lives collided with horrific results. The drunk driver was convicted in court, but it was his victims who paid the price.

Sonya Daly tells her own story.

With any serious accident, there is a critical moment in time; a wrong decision that is made, and lives that are irrevocably changed - although, in my case not ended forever.

The evening had begun as just another Wednesday night at our Hamilton flat. Home from work at 5.30pm, then dinner. My flatmates, Bill, 'Tom and Karley had friends visiting we sat around talking. It was Easter that weekend and I had a to Wellington planned. My head was filled with tops and skirts from lavish designer boutiques, the Wellington night life, catching up with friends and shopping, shopping, shopping!

My friend Susan and I thought we'd check out the local pub to see who was about. Nothing was really happening and we didn't stay long. Instead, to satisfy an attack of the munchies, we drove to McDonald's on Grey Street in Hamilton, parked the car and hopped out to cross the road .At 10. 10pm oil March 27, 1996 my life changed forever. Susan and I had crossed over onto the central median strip and were waiting for a break in the traffic. We were hungry - and in a flurry to get something to eat. We weren't to know that within a split second, the expression "dying for a feed" would take on an entirely different meaning. Minutes earlier, Scott Herbison had left the same pub and set off in his van along Grey Street. Caught behind a slow vehicle travelling in his path, he pulled out to overtake and mounted the median strip to pass colliding with Susan and me as we waited for the traffic to clear. Herbison told the police he was travelling at 6Okm/h and didn't see my friend and me until he hit us.

The impact threw us 24 metres down the road. Susan suffered a split liver, a cut kidney, head injuries, internal bleeding and bruising. I received critical head injuries, a smashed jaw, broken pelvis, broken leg, and internal injuries. Because there were so many call-outs that night, it took 20 minutes for an ambulance to be sent in from Cambridge, even though we were only 5 minutes away from Waikato Hospital. However the police arrived on the scene almost immediately and Constable Gerald Ransley, who was on traffic duty, held me as I lay close to death until help arrived. Later, he visited me in hospital, where I spent nine days in a coma.

The doctors thought I'd be severely brain damaged and gave me a 40 per cent chance of survival. But I surprised them all by getting out of hospital in 10 weeks, although I walked with a frame, then on crutches, for six months. For the rest of my life, I will be deaf in my right ear. I have four metal plates and 16 screws in my face, a pin in my leg and a damaged nerve in my right eye which has left me with double vision. My jaw was pushed so far back into my skull by the impact that my middle ear collapsed. In April - more than a year after tile accident - I had reconstructive surgery to rebuild the damage. Now I'm waiting for another operation, on the nerve in my eye.

I was still in a wheelchair when I went to court for Herbison's first appearance. I was shaking, but I wanted to see him. I couldn't believe how much this man had put me through. He never once came and saw me and apologised. I never heard from him at all.

A repeat drink-driving offender, Scott Herbison, aged 23, had an excess breath alcohol level of 572 microgrammes on the night of the crash. The legal limit is 400mcg. I had become just another victim of just another careless drunk driver. Police who inspected his van found no current warrant of fitness or registration on the vehicle. The front windscreen had been removed and replaced with a plastic sheet.

The Hamilton District Court jailed Herbison for six months, but he served only three months of that sentence. He was also disqualified from driving for 18 months and ordered to pay reparation of $2,000 to Susan and to myself not even a fraction of the cost of my operations and medical expenses, which have been paid by ACC.

Thirteen months have passed since the crash and he has made no effort to pay either of us. I doubt we'll ever see any of it, as Herbison, a self-employed plasterer, has disappeared and can't be located. At the time, the accident attracted a lot of media attention. In an interview with the Waikato Times, Herbison said he had no choice but to pick up the pieces of his life: "I really regret it happened," he told the Times. "But nothing I do or say is going to change anything, so I have to get on with my life as normally as I can. I was really angry at myself. I'd been done for DIC [drink-driving] before, but it didn't really hit me then. It has now. Of course, I'm sorry. It won't ever happen again."

Herbison does not deserve my forgiveness. "Sorry" will never be enough. He knows this. Only when a member of his own family, or someone he really cares about, is hit by a drunk driver, will he truly understand. I feel as if I've aged 10 years. It will take me a long time to forgive him and to emotionally heal.

My family and friends have given me tremendous support, but I had to watch and listen to them living their lives while I lay there in hospital, incapacitated. I used to love going to pubs and restaurants. Now I find them frustrating. At first, I felt stupid because I couldn't hear. Now I have to adapt. To help to come to terms with my disability, I've attended sign-language classes at the Hamilton Hearing Association and have started working with hearing-impaired children at a local primary school.

Before the accident, I had recently graduated from Waikato Polytechnic with a certificate in journalism and started my first job at *This Week* newspaper. Last year, I went back for a while, doing three hours a day, three days a week. That was all I could manage. I still tire easily. I need to have a sleep every day and I'm told that will continue to be the case for up to two years.

This year, I decided I wanted to do something more rewarding with my life, so I started at university part-time, doing a social science degree majoring in psychology. What I'd really like to do is something to help improve the lives of children who suffer from hearing problems, as I do. The difficulties I have experienced since my accident have been horrendous, but I'm probably fortunate simply because I'm alive and escaped serious disability. Still, I think about the "if onlys". If Scott Herbison had a proper windscreen, he might have seen my friend and me, and avoided us. That night, we had called in to visit my sister,

Rochelle, who lived three streets away from the McDonalds on Grey Street. If only we'd stayed with her longer ... If only we'd stayed at the tavern ... If only we hadn't crossed on a median strip ... A split second later and the accident might not have happened.

But we didn't have a choice when we were hit that night. Herbison did. He could have chosen not to drink and drive. Instead, it was inevitable that something or someone would be carelessly affected by his actions.

It rankles that he only served three months of his six-month jail sentence, while his actions continue to reduce the quality of my life. To me, you can't call that justice. It was his second drink-driving charge and he's admitted that he had a drinking problem. Yet today he is carrying on with his life. But for me, it didn't stop when I was hit, or when I left hospital. I'm not the same person I was. My eye will never be the game and that really rips me. After all these months, I'm still waiting for another operation. It seems never-ending.

Perhaps a harsher justice system is the only real deterrent for people who just won't learn. I believe drink-drivers should never be allowed to forget their sentence. As well as harsher prison terms, they should be made to use fluorescent licence plates. On the anniversary of their crimes, they should have their names and photographs printed in their local paper. Careless drink-drivers should be publicly marked for life, like the victims they hit. I'm going to be okay. But I feel so angry because the accident wasn't my fault, yet I am still paying for it in so many ways. What I have had to endure emotionally and physically has been horrific. This drunk driver took so much from me. Now I just wait for tile nightmare to be over.

To have your say on the drink-driving issue, write to the Road User Safety Foundation Incorporated, PO Box 21469, Henderson, Auckland.

Appendix U: Transcription of radio report.



AD STAR CONVICTED OF DRUNK DRIVING

PROGRAMME TIME NINE TO NOON ***9: 25AM*** *DATE 11/09/96*

PRESENTER (Kim Hill) : Well a chap who appeared, you've probably seen him, he's in those ACC road safety television ads but he's been convicted for drink driving. His name is Timothy, he's age 20 and he was fined this week $1,100.00 in Wellington District Court. He's lost his licence for six months. He was caught driving with a breath alcohol level more than twice the legal limit back at the end of June. He says he's really embarrassed - seems like an understatement to me. How are you Tim?

TIMOTHY C : Morning, yeah, I'm not too bad Kim.

PRESENTER : Are you really embarrassed?

TIMOTHY C : oh extremely, yeah. The worst thing about it is that I've always said that I've actually got feelings towards it - that it is the most stupid thing anyone can do for obvious reasons. Then I managed to go and do it myself.

PRESENTER: How did you come to do such a stupid thing?

TIMOTHY C : Well we were basically just sitting up at the top of Mount Vic (Victoria - Wellington) and that's where it happened and they said to me... I've got a couple of friends and we decided that I was the more sober one to be driving which is silly in itself.

PRESENTER: You drew the short straw.

TIMOTHY C : I drew the short straw so to speak, yes.

PRESENTER: But what, had you been out to a club?

TIMOTHY C :Um yes we had and we were just out up at Mt Vic with a friend who wasn't from Wellington showing him the view so

PRESENTER And the Police came up and they breathalysed you up there.

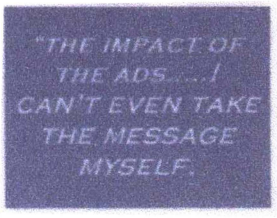
TIMOTHY C: Yes they did.

PRESENTER : You were'nt drinking in the car?

TIMOTHY C : No, not in the car while we were driving.....

PRESENTER: See the thing that strikes me is that ACC is spending 'squillions' of dollars on these ads and **if the people who are delivering the message can't absorb the message then how can anybody else?**

TIMOTHY C :Yeah I see what you're saying. Well as far as I can see, and as far as I can tell and the responses I've had from a lot of people that I know towards the ACC ads is that they have been very effective. A lot of my friends obviously all picture me in it and comment on how good they think those ads are. In fact ACC told me this morning they've actually had letters from people who have said that they thought that they were fantastic. One lady even said that the cornering one, she's determined that it saved her life. So I mean I still think that the impact of the ads is very good but what you're saying, yes, **that I can't even take the message myself!**



Appendix V: Results of Questionnaire Q2b, 1997 (from Appendix G)

It is best to abuse drivers	Before	After
Agree	0	0
Mostly true	1	0
Sometimes	6	8
Very seldom	5	2
Disagree	4	6

Feel good when courteous to other drivers	Before	After
Disagree	2	0
Very Seldom	2	3
Sometimes agree	10	1
Mostly agree	0	3
Agree	0	7

OK to drink and drive without passengers	Before	After
Agree	0	0
Mostly agree	0	0
Sometimes true	0	1
Mostly disagree	0	1
Disagree	18	16

Seatbelts are not that important to wear	Before	After
Agree	2	3
Mostly agree	0	0
Sometimes true	3	2
Mostly disagree	0	2
Disagree	10	8

It is the duty for every person to do his/her best	Before	After
Disagree	0	0
Very Seldom	1	0
Sometimes agree	2	1
Mostly agree	1	3
Agree	10	10

Personal goals from the course	After
Nothing / don't know	5
Interest	2
Defensive ideas	5
Better safety skills	17
Road Code / licence	11
Learn about roads	4
Knowledge	8

- Fewer students at the beginning had *driven without a licence* than last year (three students instead of nine) but 23 (two thirds) still knew of someone who drove without a licence (personal friends, family friends or relatives).
- Similar egocentric reasons were given for driving without a licence, "wanting it now", "like taking risks", and "knowing how to drive, therefore, I don't need one."
- Half of the 26 responses at the conclusion agreed that a driver's licence was important. This was an improvement on the first implementation by only 2 students which was not as comprehensive as the previous year. More choices (5) in the Likert type scale could have accounted for the spread of responses.
- An awareness of the possibility of being involved in a crash had only minimally improved by the movement of one student to each higher level with no student feeling entirely safe.
- Attitude towards speed showed a slight improvement with most participants agreeing that speed was dangerous. Students reported that speed increased: "the likelihood of killing someone," "hitting something harder," or had "its own consequences." Most students realised the dangers of speeding.
- Many students, were not yet convinced that abuse (which generally implied verbal abuse or non-physical gesticulation) was inappropriate in the traffic task. At the conclusion of the implementation, avoidance of abuse was indicated by only 45 percent of students and this was in spite of lessons looking at the implications of road rage.
- The most significant gains over the first questionnaire were found in responses to the statement 'feeling good about being courteous to other drivers'. Over three-quarters had moved towards agreement with the sentiments. However, the total who did not condone abuse had only attained 50 percent at the conclusion of the second implementation.
- Suggestions about how to lower the country's road deaths and injuries showed a range of responses similar to the first implementation with most reiterating current policies concerning speed, alcohol use and seatbelts. Responses, which showed direct links with the materials of the course, were of interest as they included a raised awareness of courtesy, communications between road users, concentration, statistics, and the opportunity to see the consequences of road trauma. Several of the ideas expressed had been the basis of the *TAKE FIVE* programme.
- Responses to drinking and driving showed the highest consensus of opinion, both at the commencement and conclusion of the implementations with 97 percent indicating that they disagreed with drinking and driving. Responses from School B, the single sex boy's school, were notable for a 100 percent consistency at the highest level of safety in both pre and post-implementation questionnaires.
- A lower level of compliance concerning safe seatbelt wearing was found in student responses at the end of the programme. Misconceptions about the safety of wearing seatbelts appeared to influence some students to be less committed to wearing seatbelts.
- Using a question that had received the greatest level of consistency in Best and Edwards (1982) research, the proposition that "it is the duty for every person

to do his/her very best" drew similarly high levels of compliance from students with 71 percent agreeing in both questionnaires. A slight improvement over the first implementation saw the remaining 29 percent agreeing with the proposition. This appeared to indicate that wider promotion of the value might have some possible beneficial influence on safety.

- Finally, post-implementation responses about value of the course for students showed that most acknowledged a greater global appreciation of "safety; driver safety; coping with vehicles; knowledge of New Zealand roads and conditions," and "more understanding of the *Road Code* to help when I sit the learner's test." Other outcomes mentioned were "being more careful, courteous and using greater concentration," and "developing a knowledge of mistakes" and "road trauma prevention."

Appendix W: Results of Questionnaire Q2c, 1997 (from Appendix L)

In the student feedback questionnaire (Q2c), I used three levels to analyse or interpret comments:

(a) a positive outcome from the intervention with accompanying comments,

(b) single word response of agreement or enjoyment rather than any deeper reasoning, and

(c) either a nil or some form of negative response.

A combined total of eighteen students responded to the questionnaire.

- I set a cloze activity for students to complete missing words in *summary sentences*. Out of fourteen students, all students correctly recalled two words, thirteen recalled another two, eleven recalled another two and ten recalled the final word. With a high average response, students showed a realistic appreciation of the vulnerability of youth and possible outcomes from student behaviours. Most indicated what they could do to reduce risk.
- The checklist of traffic safety (*T5CTS*) based on the recall of the five factors in *TAKE FIVE-STAY ALIVE* slogan, showed a high number of correct/almost correct responses. Close to half (seven) had five correct responses, two could recall four, three could recall three, three could recall two, one could recall one. Two could not recall any. Given the calibre of students and the difficulties several had with learning, it was understandable that some would have difficulty as the ideas behind the slogan were more abstract than concrete.
- A third of the students found video excerpts helpful and offered reasons why this was so, "they really affect my driving because they showed me that all can happen to me (two); very useful in a way giving me more learning; see what the crash scenes are really like; show what people do on the road and how stupid it can be; exactly seeing some of the crashes / accidents". Another third enjoyed the videos without reason while the remainder made no comment. One of these students admitted " can't remember - was not present often".
- Half of the students found that the 'driving task model' was a positive influence. These students found that the model was "really good in a driver education class; it makes me think and imagine that I'm the active driver" Three students observed, "it was interesting seeing how much [sic] things the driver has to concentrate on while driving". Three students found it "boring" or admitted that they could not understand it while three others made no comment.
- Half of the students also appreciated the real life scenarios as they, showed how bad things can get and the consequences afterwards; showed how it affected (victims) mentally and physically". Almost half had no comment to make.
- Half of the students enjoyed the visits from special guests. Many noted particularly how "just one drink driver can destroy the rest of someone's life". The element of surprise was also mentioned several times in regard to "how alcohol and injury affect people; how much [sic] injuries they had between them; you had to believe it - (they had) scars injuries to prove it; sad to see

what can happen to innocent people". Four students made no comment and four had been absent on the day of the visits.

- Student appreciation of the course was mostly positive. Apart from two no comments and three who felt that it rated "alright", the remaining twelve felt that it was "enjoyable and helpful". Eight of the students acknowledged that they "learned a lot of things; understood things they needed to know; and realised what could happen when driving".
- Students found the least enjoyable part being writing and bookwork (four); newspaper cuttings (three); the model (one) and statistics (one). Apart from these comments two students were upset (angry) at the sadness of Sonya and Susan's plights and three people found nothing came to mind.
- The most enjoyable part for half of the students was watching videos although only one justified that this was because "they showed the consequences of reckless driving". In addition, guest speakers (three) and statistical summaries (four) were mentioned and a student who liked everything also enjoyed the fact that the "class was presented with information I did not know about but found out".
- The suggestions students made for improvements were few. One wanted to participate in an activity (demonstrated in the ALAC video) concerned with drinking and driving under controlled conditions to know what it was like. Others mentioned making drink driving advertisements, role playing and researching certain accidents. Another clearly stated to "leave it as it was - enjoyable and interesting".