Moving towards normalising CALL:

A case study from Timor-Leste

A thesis submitted in fulfilment

of the requirements for the degree

of

Master of Philosophy (MPhil)

at

The University of Waikato

by

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The University of Waikato

2012

Statement of Intellectual Ownership

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

To the best of my knowledge and belief this thesis contains no material previously published by any other persons except where due acknowledgement has been made.

Signature:

Date: 12 April, 2012

Abstract

It is now widely understood that teachers are the main decision makers in the classroom, so when an innovation is introduced into a teaching and learning setting it seems that teachers' beliefs and attitudes may be a major determinant in the success or otherwise of that investment.

This case study examines the process of a Computer Assisted Language Learning (CALL) application being introduced into a university setting. Bax (2003) posited that a new technology is 'normalised' when it is invisible and fully integrated, just as pens and books have been, into everyday classroom use. To gain further insights into the process of an innovatory CALL application moving 'towards normalisation' (Chambers & Bax 2006), the present study solicited university teachers' opinions and impressions towards the innovation over a period of five months.

The innovation is a software application developed in the Computer Science Department at the University of Waikato (http://flax.nzdl.org/greenstone3/flax). The Flexible Language Acquisition Device (FLAX) uses digitalised libraries to provide language learning tasks for students, both texts and tasks being written by teachers or more able students. The English Department at the National University of Timor-Leste (UNTL) was the setting selected for the study, as the researcher had spent fourteen months there as a volunteer teacher in 2005-6. The case study is framed within a wider (2006-2011) collaborative curriculum project between UNTL and the University of Waikato. It was decided to collect oral, rather than written, data in order to align with the oral traditions of Timor-Leste. Thus, oral reflective journals captured participants' perceptions in audio-recorded discussions with a peer over three occasions. Focus groups of participants reflected on key issues at entry and exit points, and the researcher wrote her own daily reflective journal.

The findings showed that the participants moved from a position of excitement tinged with concern to a position of confidence and readiness to implement FLAX during the reseacher's visit, indicating a positive move towards normalisation. A powerful insight gained by the researcher was that teachers were able to co-construct a range of ways of using the programme with their students

in terms of autonomous learning, peer scaffolding and the importance of the affective domain in language learning. These findings reinforced the notion that the introduction of technologies is a social construct, not just a technological one (Bax, 2011). A further lens of investigation of the innovation was provided by Activity Theory, (Engeström 1987), which showed that the process of curricular normalisation is influenced by activity outside the classrom, and may strengthen or reduce the object of activity, in this case improved learning outcomes.

The implications of the case study may have resonance in relatable settings. It seems that encouraging a collaborative approach may enable teachers to envision and ideate new ways to teach and learn, and incorporate new technologies into their own settings. This study may also have implications for external change agents as they contemplate assisting learning communities to normalise curriculum innovation.

Acknowledgements

There are many people who have contributed to the completion of the study and I would like to warmly thank them all.

I have appreciated the patient support offered by my two supervisors, Dr Roger Barnard and Dr James McLellan. By providing affirmation when needed, portions of challenge that were manageable and being a source of academic wealth and wisdom they have inspired me to engage in and complete this manuscript. Thanks also to my colleagues and fellow post graduate students at the University of Waikato. It has been great to belong to our learning community.

I would like to thank the participants in this study, teachers at the Universidade Nacional Timor Lorosa'e for your generosity and willingness to be part of this project. Your enthusiasm and readiness to be involved and try something new was an inspiration.

A huge vote of thanks is due to my work colleagues and the committee at English Language Partners Waikato, and also to the national staff. Your warm support for my professional and personal development has been matchless and I thank you for your generosity.

Thanks also to Jennifer Buckle for proofreading my work and to Jenny McGhee for her assistance with formatting.

Finally, I want to thank my family and especially my husband Eion, who has been my rock for the past four years, quietly supporting me and encouraging me to complete the task.

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List of Abbreviations

AusAID	The Australian Agency for International Development
CALL	Computer Assisted Language Learning
CAVR Report	The Timor-Leste Commission for Reception, Truth and Reconciliation
ESP	English for Specific Purposes
FASS	Faculty of Arts and Social Sciences, University of Waikato
FLAX	Flexible Language Acquisition Application
HOD	Head of Department
INTERFET	The International Force for East Timor
IT	Information Technology
MALL	Mobile Assisted Language Learning
NGO	Non Governmental Organisation
NZAID	The New Zealand Aid Programme
TEFL	Teaching English as a Foreign Language
UoW	University of Waikato
UN	United Nations
UNTAET	United Nations Transitional Administration in East Timor
UNTIM	UniversitasTimor Timur
UNTL	Universidade Nacional Timor Lorosa'e
USAID	United States Agency for International Development
VSA	Volunteer Service Abroad New Zealand

Chapter One

1   Background

This study originated from fourteen months that I spent as a volunteer in the National University of Timor-Leste (Universidade Nacional Timor Lorosa'e) (UNTL), located in Dili, the capital city of Timor-Leste. My assignment was to review the curriculum and to provide in-service training for teachers. By the end of this time, I had become familiar with the activities within the English department, the scope of the curriculum, and had joined with a team of teachers to review the existing curriculum. On returning to New Zealand, a collaborative research project was commenced to continue and develop the association between the English Department at UNTL and the Faculty of Arts and Social Sciences (FASS) at University of Waikato. It was in this context that the Greenstone digital library system and Flexible Language Acquisition (FLAX) programme was introduced with a view to its pedagogical potential in the department. Greenstone can be used to generate collections of digitalised texts which can be utilised to develop language acquisition tasks for students to assist with English language learning.

The FLAX innovation was embedded into a broader inter-university study which was intended to explore with members from both universities ways of improving the teaching, learning and research skills processes at UNTL through a series of visits to both sites. To address these developmental processes in this setting it was deemed vital to understand more about the teachers' attitudes and beliefs and, although mainstream education has long been aware that teaching is "substantially influenced and even determined by teachers' underlying thinking" (Clark & Peterson, 1986, p. 255), it is only since the late 1990s that the beliefs and knowledge of second language teachers have been empirically investigated (Borg, 2006).

The idea of teachers and students being able to access texts through digital means seemed to have merit, as feedback from both teachers and students at the time of my visit indicated that there was a paucity of print and paper-based resources to support the curriculum in the English department. In this context, the idea of leapfrogging into digitalised means of learning therefore seemed worthy of

investigation. The term 'leapfrogging' was originally used in the context of economic growth theories and among industrial-organisation innovation studies.

1.1 Brief Political History

Timor-Leste regained its independence in 2002 after 459 years of Portuguese and twenty four years of Indonesian colonisation. The country is located on the eastern half of the island of Timor and is 640 km northwest of Darwin, Australia and 1500 kilometres east of Jakarta, Indonesia, its two nearest neighbours.

Timor-Leste became a Portuguese colony in 1516. For the following three and a half centuries Portuguese maintained control of trade in the region and exported its natural resources including sandalwood and beeswax. This regime came to an end in 1974 with the Carnation Revolution in Portugal which overthrew the Salazar regime, and Portugal subsequently withdrew from Timor-Leste.
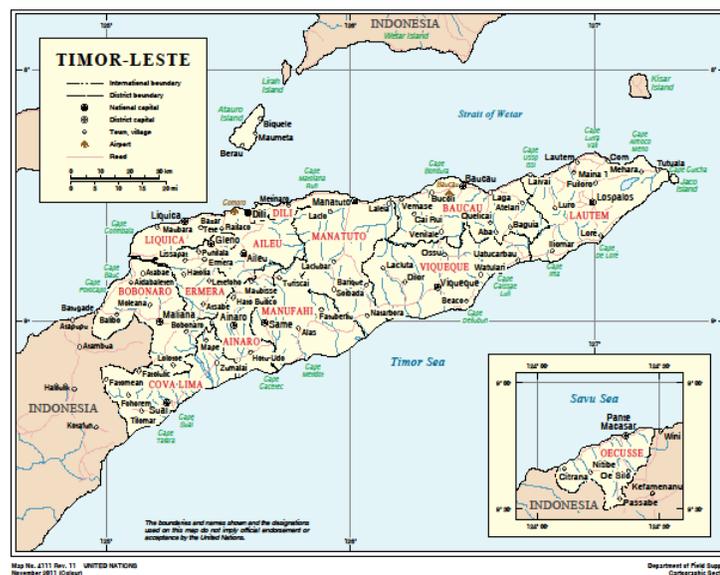
Figure1.1

Map of Timor-Leste, (Cartographic Section, 2011, United Nations)

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This event opened the way for the country to plan for its independence and elections. Two parties had worked for independence but their disagreements gave their neighbour, Indonesia, the opportunity to occupy the country. After having briefly declared independence for nine days in 1975, Timor-Leste was annexed by Indonesia for a period of twenty four years. During those years the education system was overhauled and massively expanded as part of the process of 'Indonesianisation'. "Bahasa Indonesia became the language of instruction and the written language of an entire generation of East Timorese" (Appleby, 2006, p. 4).

A resistance movement developed during the Indonesian era and eventually, in 1998, "with the end of the cold war, the fall of the Suharto regime, and a realignment of global economic and political force" (Appleby, 2006, p. 4), the people of Timor-Leste were given the opportunity for a referendum. This was supervised by the United Nations (UN) and the East Timorese people were invited to choose between full independence and special autonomy within Indonesia. They overwhelmingly chose independence on 4 September 1999. This resulted in a backlash and widespread destruction in Dili and throughout the country. Taylor-Leech (2009) cites the CAVR Report (The Timor-Leste Commission for Reception, Truth and Reconciliation) which states that "some 60,000 people were displaced from their homes at gunpoint and 250,000 were forcibly relocated to camps in West Timor" (The Timor-Leste Commission for Reception, Truth and Reconciliation, 2006, p. 85).

A multinational peacekeeping force troop was established by the UN Security Council to restore order. The International Force for East Timor (INTERFET), under Australian command, arrived in the country and a short time later the UN established the United Nations Transitional Administration in East Timor (UNTAET), which was responsible for the administration of the country during its transition to independence. Eventually, in 2002, the country held its first elections.

There have been some periods of tension since independence in 2002. In 2006, there were skirmishes after a rift developed in the military and portions of the population were displaced. In 2008, there was another period of instability with an

attempt on the life of the President. Since then, there has been a period of greater stability and there are plans for the withdrawal of United Nations, Australian and New Zealand peace-keeping forces in the near future.

1.2   Socioeconomic context

The peoples of Timor-Leste are culturally diverse, as evidenced by the fifteen national languages spoken. Before the arrival of the Portuguese, traders from Malaya, China and Java visited, but the population seemed to resist external influences, living a rural lifestyle based on fishing and farming. Timor-Leste has an oral culture. Many of its customary songs and poems are part of a rich tradition passed down through generations. The Government of Timor-Leste's website states that "mythology and legend play an important role in passing on knowledge about the pre-colonial period and the later evolution of the kingdoms" (Timor-Leste Government, 2005).

The 2010 Census revealed that the total population of Timor-Leste is 1,066,582 with a large youth demographic: the census in 2004 showed that half of the population was under the age of eighteen, and that each year 15,000 young people enter the job market. The majority of Timor-Leste's population (70.4%) live in rural areas and are reliant on subsistence agriculture. Employment opportunities are mainly located in Dili and consequently there has been a drift from the rural areas to Dili for employment and education. The 2010 Census showed the increase in population growth in Dili between 2004 and 2010 was 33.3%, compared with the national increase in population of 2.41% (Timor-Leste Government, 2011). The government is currently building its infrastructure prioritising agriculture, education, health and transport. The current exploitation of oil reserves in the Timor Sea, however, offers the prospect of a more substantial financial basis for the country's economic development.

1.3   Linguistic context

The official languages of Timor-Leste are Portuguese and the national language Tetum, which is spoken by a large majority of the population. Bahasa Indonesia and

English are defined as working languages for as long as is deemed necessary under the constitution (Timor-Leste Government, 2002).

Tetum (sometimes spelt Tetun) is an Austronesian language, one variety of which (known as Tetum-Prasa or Tetum-Dili) is spoken around the capital city, Dili. Also widely used in the country are other dialects of Tetum, including Tetum-Terik, and there are at least fifteen other indigenous languages in the country. Tetum is one of the most common means of communication between Timorese (Hajek, 2000, p. 401). A large proportion of the lexis of Tetum is derived from Portuguese (Van Engelenhoven& Williams-van Klinken, 2006, p.735), and it has therefore been described as a creole.

Under Indonesian rule, the use of Portuguese was banned, but it was used by the clandestine resistance, especially in communicating through spoken and written channels with the outside world (Cabral & Martin-Jones, 2008). Literacy practices were used to mediate the struggle using multilingual texts as dictated by the situation at the time. They were used on three fronts, the armed front, the clandestine front and the diplomatic front. Portuguese and Tetum thus gained importance as symbols of resistance and were adopted as the two official languages when the constitution was formed in 2002. Portuguese and Tetum were also nominated as official languages in 1975, in the first period of brief independence. Most citizens of Timor-Leste speak at least two languages; their indigenous language and Tetum. Depending on their age and educational background they may also speak Portuguese, Bahasa Indonesia, and English.

Although animistic beliefs continue to be influential, the majority of the population is Roman Catholic. (Timor-Leste Government, 2005).The Catholic church under the Portuguese regime was largely responsible for the increase in literacy in the population, and many Timorese high school graduates went on to complete further studies in Portugal. During the Indonesian era, Bahasa Indonesia was taught in schools, and the school system was developed using Indonesian textbooks.
At the time of independence in 2002, the official languages of Timor-Leste-Portuguese and Tetum- were designated as the language of instruction for schools, utilising a bilingual approach. The government is supporting in-service teachers to

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become more proficient in Portuguese language. One example of this was in late 2009 when all teachers in schools and universities received intensive tuition in Portuguese from teachers from Brazil and Portugal for a period of three months.

1.4   Universidade Nacional Timor Lorosa'e

The National University of Timor-Leste (UNTL) has its origins in the Universitas Timor Timur (UNTIM), a private university established during the Indonesian era in 1986. When the university reopened in 2000 after the regime change, most of the buildings were still being rebuilt. Since 2002 UNTL has been in a development phase and there are now eight faculties in the University. The English department is part of the Faculty of Arts and Sciences. The annual intake is around 150 students who are completing a Licentiate in Education and are training to be teachers of English (as an additional or foreign language) in the nation's secondary schools.

Currently, the main medium of instruction at the National University is Portuguese with some use of Bahasa Indonesia remaining. English is used in the English department. Students at UNTL show competency in at least three languages; their mother tongue, Tetum, and Bahasa Indonesia. Some have a degree of fluency in Portuguese but only a very few enter the university with any level of fluency in English. Over the last ten years, a number of overseas academics have spent time at the site, often as visiting teachers or consultants. Their publications examine aspects of learning and teaching at the National University in Timor-Leste and offer valuable insights into the setting.

Appleby (2006) examined teaching practices by Australian teachers who were teaching at UNTL in the context of international development, and discussed their varied responses to the environment in Timor-Leste. At that stage, English was perceived widely by students as having the power to bring them social, economic and educational benefits. She interviewed the visiting teachers and found that some of them taught within the confines of the 'overseas expert' bringing methods they perceived to be 'best practice', whereas others decided to take concerns raised by

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students about the local context and use the language course to evaluate and explore these concerns.

Appleby (2009) also reflected on the issues around gender that arose in the classroom among Australian women teachers with an AusAID Programme in East Timor in 2002. The article recounts four critical incidents that took place in different spaces. The teachers involved reflected on their responses to these incidents and their meanings in the climate current at the time. She concluded that:

> Although expatriate teachers may be able to take up the authority conferred by the institution, their privileged position in racial and economic politics of difference, and their status as cultural outsiders, constrains the ways in which they can speak and act on issues of gender (p.109).

This article also prompted me to consider the implications of outside experts who are perceived as bearers of progress, coming to Timor-Leste. Taylor-Leech (2009) also expounded the challenges facing educators entering the environment and suggests some approaches which I have found helpful in my role as a researcher. In her study of discontinuities in a language development aid project situated at UNTL, she cites Markee (2002) and concludes that language development which relates to competency in English is different from language in development, which is "the resolution of practical language-related problems in the context of individual and societal development." She also cites Appleby, Copley, Sithirajvongsa, & Pennycook (2002) and argues that a further challenge for language development aid projects is "how to engage with the social, historical, political and economic concerns that constitute the recipients' daily reality, thus remaining relevant to students' needs, sociocultural realities and achieving a closer fit with their desired goals and outcomes" (Taylor-Leech, 2009, p. 107).

Very recently action research studies have been undertaken within the English Department by teachers and members of an inter-university collaborative project between UNTL and the University of Waikato (UoW). The first study investigated discussion strategies and topic preferences in speaking classes, and the second study examined language use in English classes.

The first study observed English classes at UNTL and also at a university in New Zealand. Participants undertook a survey about strategies for improving their spoken English in class, as well as indicating their preferred discussion topics. The results from observations at UNTL showed that many students found discussions in a group stressful, and that in most groups the group leader seemed to have more talking time than other group members. The results in regard to topics for discussion were quite convergent across both settings, with gender and academic study being popular topics with both groups. Students were also asked what strategies they used to assist their English, and the use of social media to communicate and make friends which included Facebook and online chat rated very highly in both contexts. This result is of interest to this study as it suggests that students in Timor-Leste are becoming normalised to using social media sites to achieve their language goals. The writers of the study thought it suggested that a more decentralised and autonomous teaching model "promoting increased student participation in their learning" may be of benefit to the quality of teaching at UNTL (Amaral, Anuno, da Costa, Sancho and McLellan 2011).

The second study examined the languages used in classes in the English department and found that teachers support their teaching by utilising other languages in the environment when they deemed it helpful (Barnard, Robinson, da Costa, and Sarmento 2011). A quantitative analysis of the data of this study shows that in this particular context, the extent of code switching by English language instructors varied from zero to more than half of the lesson. During interviews about their use of language teachers discussed reasons for their choices. All had reasonable grounds for their positions; some were for pragmatic reasons, some were based on principle, and others said it felt natural as plurilingualism is practised widely in society. The value of this project was that it revealed the nature of language use in the classrooms, and the extent of the range of beliefs and practices about code switching among a group of colleagues.

1.5 My involvement

My involvement with UNTL started in 2005 when as a Master's graduate I volunteered for an assignment with Volunteer Service Abroad New Zealand (VSA). The two year assignment was to work with the teachers in the English Department at UNTL to review the English curriculum and to support teacher development.

The department has around 600 students enrolled in a four year degree programme towards a Licentiate of Education. The completion task for students is to defend a thesis in front of an examination panel. The curriculum, which was very similar to that used prior to 1999, was under review. It had courses in English language learning, linguistics, language teaching methodology, English literature, research methods and translation methods, making it a rather crowded curriculum. English language acquisition papers occupied much of the curriculum during the first two years of the degree.

Early in the assignment, I made the decision that teaching courses in English language and research methodology would be a useful way to become one of the team, to understand more about the dynamics of the department and to learn what the challenges were for the students. There was opportunity to teach as some of the teachers were overseas undertaking further academic study.

One of the recurring themes that emerged during the assignment was the scarcity of resources available to support learning within the department. Although there was some language learning material for English in the main library, it was rather outdated and many of the senior students were attempting to write theses with very few resources. Access to the internet was only available to some administrators in 2005-6. In addition, there were very few text books available for students and they were expected to purchase their own. The teachers mainly used materials they had collected in their studies overseas or when they were undergraduates themselves. The photocopying of course material was very limited too.

During the year, I focused on two key tasks: reviewing the curriculum with a small group of teachers and working with key staff to open a small reading room with donated resources. During this time, I looked for opportunities to build capacity but there were few opportunities to have structured workshops, as it was difficult to meet

during the term, so I concluded that attempting to model 'good practice' may be the most useful way to build capacity. I left the assignment having enjoyed the challenge, and built positive rapport with the staff but still with many unanswered questions about capacity building in such a setting.

1.6   Wider project

While on assignment I looked for professional development opportunities for the staff, and in 2006 a Higher Education Exchange Programme from Asia New Zealand Foundation prompted me to approach University of Waikato to apply for this inter-university research project. This resulted in a visit from an UNTL teacher to Waikato and was the start of a project which promotes collaboration between English language and Applied Linguistics staff from both universities to develop teaching and learning in the English Department at UNTL.

In 2007, collaborative project team members contacted a team in the Computer Science Department at the University of Waikato who had developed an application for language learning called FLAX (Flexible Language Acquisition Device) as part of a wider Greenstone project. The principle behind Greenstone is to deploy digital library software to access prose and multimedia resources from around the world to build collections of contextually-appropriate texts (Witten, Wu, & Yu, 2011). Such digitalised texts were the foundation upon which pedagogic activities, exercises and tasks such as FLAX could be built, and, as both texts and tasks could be contextualised to specific sociocultural and learning environments, there was potential for use in the setting in Timor-Leste.

I decided to investigate the impact of the FLAX programme on the teaching and learning processes at UNTL. We realised that training in its use would be necessary and that scaffolding support should be offered to the teachers during its introduction and implementation. I was interested in the teachers' perceptions and reactions to the innovation, and thought it would be interesting to trace the development of the use of computers as a tool for learning in this setting, and so considered that a case study may be a useful way to research this progression of ideas. My investigation would be confined to the question of normalisation of the use

of technology, in particular the FLAX application, whilst the wider inter-university project would have a number of other objectives and outcomes.

It was 2009 before the application was introduced by another team member from UoW and then later in that year I reintroduced FLAX as part of my data collection visit. By this time significant changes had been noted, particularly around the students' use of technology outside the learning context. They were interacting with the internet at internet cafes, using social networking and there was wide use of mobile phones and use of texting facilities for daily communication. Recognising that giving support for the innovation would be important, I decided to run workshops for teachers re-introducing FLAX, and then invite them to record their impressions of the application at various times by discussing their thoughts with their peers.

1.7   Objectives of the present study

The objectives were to:

- introduce the application FLAX to the teachers in the English department;

- support the teachers as they learned;

- give them opportunities to reflect on the application at regular intervals;

- record their concerns and discoveries as they happened; and

- identify the extent to which this application had assisted in the 'normalisation' (Bax, 2003; Bax, 2011, Chambers & Bax, 2006) of Computer Assisted Language Learning in the environment.

This introductory chapter has provided a brief introduction and overview of the setting and a brief rationale for the research described in this thesis. In the following chapter, relevant literature about normalisation of Computer Assisted Language Learning into an environment is reviewed. Then research methods used to capture teachers' views and perspectives will be outlined followed by presentation of findings. A discussion on the findings will be followed by my conclusions and recommendations for further study.

Chapter Two Literature Review

2   Introduction

This chapter is divided into six sections. The first section begins by reviewing some issues about the complexity of curriculum change, and in particular the avoidance of "tissue rejection." Holliday (1992) suggests that an ecological approach may address some of the complexities in the change process and van Lier (1996) outlines some broad principles and strategies for a curriculum. The second section explores a key theoretical framework for this case study put forward by Bax (2003): the notion of the 'normalisation' of Computer Assisted Language Learning (CALL) into the classroom. Chambers and Bax (2006) later identified eleven implementation issues when moving 'towards normalisation', and in 2011 Bax revisited this concept. The third and fourth sections outline some of the literature on digital libraries, CALL and the FLAX innovation which assists reading and vocabulary development of language learners. The way in which the application facilitates language development through its texts and tasks is described in the fourth section. The fifth section outlines some recent thinking about teacher cognition in relation to teacher development, and begins to consider methods for this study based on the researcher's insider knowledge of the site.

In the final section, the literature is overviewed in a constructivist approach to research methods. It discusses scaffolding (Bruner, 1983), and shows how this notion gives an idea of "the dynamism of working within the ZPD" (van Lier, 1996, p.195). Finally, the wider social implications in an activity system are considered through Engeström's Expanded Activity System Model (1987), the ultimate lens through which this case study is viewed.

2.1 Complexity of Curriculum Innovation
2.1.1 Ecological approach

A potential obstacle to the success of any curriculum innovation by external change agents is the possibility of "tissue rejection", the failure of an innovation to produce change, "which is in the long term meaningful and acceptable to the host institution" (Holliday, 1992, p. 403). Holliday expands this notion by revealing that in many institutions there may be two curricula, the formal one and the 'real' or alternative one based on the 'real world' of teachers and students (pp. 405-6). He refers to Coleman (1988) who describes these influences as informal orders which are:

> ...an intangible network of personal relationships, shared knowledge, unwritten conventions, ethnic rivalries and internal politics considerations…(which) run sometimes in parallel with and sometimes in conflict with the formal overt structure of the institution. (p.157)

Holliday (1992) recommends that, if possible, external change agents discover how a department or institution operates at this informal level, so that decisions taken about change increase the chances of the innovation being successfully integrated into the setting and raising the possibility of a successful outcome. Holliday first put forward the idea of an ecological approach to change in language learning environments in 1982, taking the metaphor from the field of conservation.

The concept of tissue rejection was derived by Holliday from his earlier study in Egypt where he found that teachers became more actively involved with change when they became the owners of the project or projects. The teachers in his study had an opportunity to undertake research projects in their teaching space and then publish them. The main benefit from this approach seems to be that it does not disturb or interrupt the 'ecology' of the institution involved. His findings were similar to those of Coleman (1996), who after having observed many classrooms in Indonesia where there was apparent chaos, concluded that there was a consistency about the classrooms which had an essentially ritual socialising function, which again should be viewed through a cultural lens (p. 81). Shamim (1996) also came to similar

conclusions when she described an innovation which was resisted by the learners. She observed that teachers are mostly regarded as the key agents of change and that sometimes they "do not consider how the learners' perception of an innovation could either facilitate or impede the successful implementation of change" (Coleman, 1996, p. 110). She cites Holliday and Cooke (1982) who suggest that this approach may help to make the innovation "take root, grow, bear fruit and propagate in the local soil" (p.111). In considering an innovation into the UNTL context, there is a cogent argument for consideration of the culture of the setting to ensure that the changes bring about ecological change that has congruency and fit with the setting, and so mitigate the possibility of tissue rejection.

In approaching this project I considered the discontinuities that are apparent in the Timor-Leste context discussed by Taylor-Leech (2009), and attempted to introduce the innovation in such a way that it would both engage with the teachers and students' daily reality and achieve a close fit with their goals and outcomes (Taylor- Leech, 2009, p. 107). I hoped that this approach would avert the potential of tissue rejection.

2.1.2 Role of teachers in curriculum change and development/innovation

Coleman (1996), Fullan (2001), and Markee (2007) all state that curriculum change and development need to take into account the perceptions of the main stakeholders in the specific sociocultural contexts in which the intended curriculum is to be realised.

Canh and Barnard (2009) say that:

> of these stakeholders, teachers play a key role in the success or failure of the innovation,…because they are the executive decision-makers in the actual settings in which the intended innovation is realised – the classroom… [They argue that] If teachers are the main decision makers in the classroom, they have influence and responsibilities as knowledge makers in the setting and their ideas about the teaching and learning process become important in the change process. (p.21)

As it is the quality of the teachers themselves and the nature of their commitment to change that determine the quality of teaching and the quality of school improvement, teacher development, therefore, is a precondition of curriculum development, and teachers must play a generative role in the development of better curricula. This study then aims to involve teachers as participants and in some development processes, but ultimately as the decision makers in this setting. Fullan (2001) when discussing educational change states that change needs some impetus to get started and that it is likely that small groups of people will begin the change process and, if successful build momentum. He states that "active initiation, starting small and thinking big, bias for action, and learning by doing are all aspects of making change more manageable by getting the process underway in a desirable direction"(p.91). He says that both pressure and support are necessary for success and that successful change projects always include elements of both pressure and support (Fullan, 2001). The role of ownership in the change process is also another key element, according to Fullan. "Ownership does not occur magically at the beginning but rather is something that comes out the other end of a successful change process" (p.92).

Although there have been a number of curriculum development projects throughout Asia, there is growing evidence of mismatches between the intended curriculum of policy-makers and their advisers and the beliefs and practices of the teachers expected to adopt new methodological approaches and materials. These include wide-ranging national surveys across the region (Nunan, 2003; Littlewood, 2007) and case studies of curriculum implementation in specific contexts, such as in Korea (Yoon, 2004), Japan (Nishino and Watanabe, 2008), China (Wang, 2008), Taiwan (Tien and Barnard, 2009), and Vietnam (Canh and Barnard 2009). Such studies reinforce the point made by Nunan (2003, p. 606) that "rhetoric rather than reality is the order of the day."

McGee (1997) suggests that perhaps a more useful approach to curriculum change may be to expend effort in a normative re-educative approach to curriculum change. He argues that the theoretical basis of this approach is that

"the norms of schools can be shifted to more productive norms through the collaborative action of the staff" by which teacher knowledge and skills can be enhanced, and their beliefs systems adjusted. A prerequisite of this approach is to gain an understanding of the existing knowledge and attitudes of teachers regarding curricular issues (p.263).

This study seeks to gain understandings of teachers' positions through discussion and reflection in groups and pairs and will involve teachers from a cross section of the department. As mentioned in Chapter one, the English department teaches discrete subjects with teachers becoming specialists in their areas. This is a very stable environment especially for teachers with permanent tenure. However, Hargreaves (1994) notes that these conditions may signal what he calls a balkanised teaching environment which can arise quite readily in a departmental structure, where teachers' existence and membership are delineated with clear boundaries. Teachers can become attached to those sub-communities within which most of their working lives are contained. One potential difficulty with having such a departmental structure is that interchanges of ideas may be restricted to the subgroup. Hargreaves argues that in this "postmodern world which is fast, uncertain, diverse and complex, balkanised… structures are poorly equipped to harness the human resource necessary to create flexible learning for students and professional growth for staff." (p. 235) By introducing the innovation to teachers across the entire department and encouraging them to discuss its impact in a professional manner through discussion and reflection, it is envisaged that this may lead to further opportunities for exploration across subject divisions. The need to gain understandings from the teachers' position and to understand their views on curriculum and curriculum change prompted the methodological approach of this present study.

2.1.3 Organisational constraints

Returning to the role of teachers in curriculum change Fullan states that although new ideas or activities often relate to a programme or a set of class activities, that it is individuals who have to develop new meaning and that these individuals are often insignificant parts of a "gigantic, loosely organised, complex, messy social system that contains myriad different subjective worlds" (p.92). To complicate the process of

change further, Fullan argues that the factors of implementation and continuation reinforce or undercut each other as an interrelated system. He cites Datnow and Stringfield (2000), contributors to a study in critical issues in educational leadership in Canada, who state that their research has documented that:

> Reform adoption, implementation, and sustainability, and school change more generally, are not processes that result from individuals or institutions acting in isolation from one another. Rather, they are the result of the interrelations between and across groups in different contexts, at various points in time. In this way, forces at the state and district levels, at the design team level, and at the school and classroom levels shape the ways in which reforms fail or succeed. (p 93)

This statement has relevance to this study as it suggests that curriculum change should take a broad view of change, which may involve agents both inside and outside the classroom and indeed the school or institution itself. This study views this complexity through a framework of Activity Theory, (Leont'ev, 1987), which allows us to view this complexity within a construct which shows the interrelationship of centres of activity. This construct will be discussed more fully in Section 2.5.

As it is the quality of the teachers themselves and the nature of their commitment to change that determines the quality of teaching and the quality of school improvement, teacher development therefore is a precondition of curriculum development, and teachers must play a generative role in the development of better curricula. This study then aims to fully involve teachers as participants in the study, facilitate any professional development needs, while recognising that the teachers and their managers are ultimately the decision makers in their setting.

2.1.4 Foundational curriculum principles and the curriculum as interaction

Van Lier (1996) provides an insight into curriculum development as he links three foundational principles of learning and teaching which link theory, research and

practice. These principles (awareness, autonomy and authenticity) are an amalgam of both beliefs about knowledge (epistemological) and beliefs about values (axiological). The three principles "allow language education to unfold in a regulated yet creative manner, within a framework of social constraints and resources" (p.5). These principles are activated by strategies and the pedagogical actions taken by the classroom teacher. These are based in social interactions, and the challenge for the teacher is to consider the principles, strategies and daily routine actions at the same time. When talking about the characteristics of a good teacher, John Dewey says that they "need a long range vision of where they want to take the students [which] ensures that teaching maintains a sense of purpose and direction that guides the overall educational decision making." (van Lier,1996, p. 189) Figure 2.1 shows how van Lier views an interactive curriculum where effective strategies and actions build on the long term foundational principles.

PRINCIPLES	• awareness • autonomy • authenticity
STRATEGIES	• contingent interaction • scaffolding • critical thinking • learner training
ACTION	• tasks • field work • portfolios • conversation • negotiation • stories • genre variation • team work
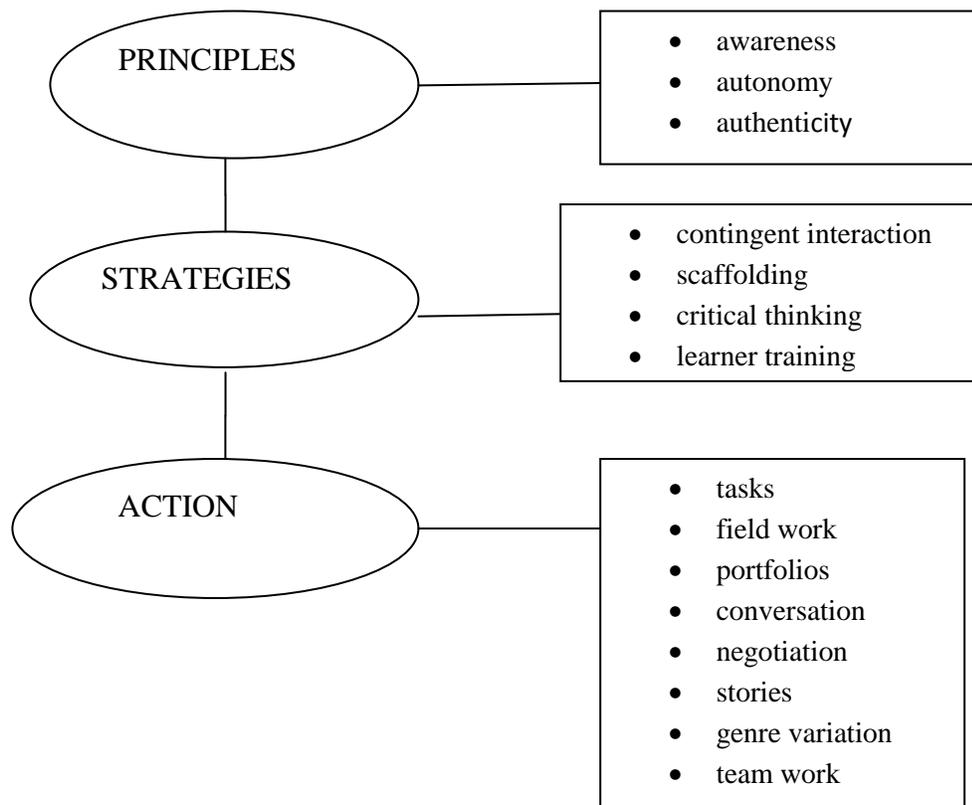
Figure 2.1

Curriculum design (van Lier, 1996, p.189).

The present study aligns with van Lier's foundational principles as it attempts to reveal teachers' perceptions about language learning, their range of motivations and how their thoughts about how the curriculum reflect their values. Gaining insights into their beliefs about teaching and learning assists the process of illumination and interpretation of their responses to the new innovation. Van Lier's three principles of awareness, autonomy and authenticity provide a focus for this research as it is anticipated that teachers' awareness of CALL will be heightened, that they may become more aware of the benefits for themselves and their students of autonomous learning through increased intrinsic motivation, and thirdly that the authenticity of their curriculum will be developed through the authoring facilities provided in the FLAX application (van Lier, 1996, p.189).

2.2 Normalisation as a concept and a framework

CALL has been defined by Beatty (2003) as "any process in which a learner uses a computer and, as a result, improves his or her language" (p.7). Bax (2003) posited the idea that the process of computers becoming part of classroom use is a 'normalisation' process. This seems to be a useful framework through which to investigate teacher's beliefs and attitudes towards the innovation at UNTL.

Bax (2003) presupposed a state of normalising of CALL which will be reached when computers are used every day by language students and teachers as an integral part of their lessons. Bax suggested that in this state of normalisation teachers and students will use computers without fear or inhibition, and equally without an exaggerated respect for what they can do. "They will not be the centre of any lesson, but they will play a part in almost all" (2003, p. 24). He surmised that when a state of normalisation has been reached, computers would then be completely integrated into all other aspects of classroom life, alongside course books, teachers and notepads and would "go almost unnoticed." Most importantly, he said that CALL would be normalised when "computers are treated as secondary to learning itself, when the needs of learners will be carefully analysed first of all, and then the computer used to serve those needs" (p. 24). Bax looked forward to this state and suggested three approaches to CALL: restricted, open and integrated. Restricted CALL would be

where tasks were simple and the teachers' role is mainly monitoring. In the open CALL stage, there would be a wider variety of tasks and students would often interact with each other. He thought that the third stage, which he called integrated CALL, had not been reached at the time of writing, but would represent a normalised state when the computer would be invisible and integrated into the syllabus (see Table 2.1).

Table 2.1

Approaches to CALL: restricted, open and integrated (Bax, 2003)

Content	Type of task	Type of student activity	Type of feedback	Teacher roles	Teacher attitudes	Position in curriculum	Position in lesson	Physical position of computer
Restricted Call	Closed drills, quizzes	Text reconstruction Answering closed questions Minimal interaction with others.	Correct/ incorrect	Monitor	Exaggerated fear and / or awe	Not integrated into syllabus-optional extra Technology precedes syllabus and learner needs	Whole CALL lesson	Separate computer lab
Open Call	Simulations games	Interacting with the computer Occasional interaction with other students	Interacting with the computer Occasional interaction with other students	Monitor/ facilitator	Exaggerated fear and /or awe	Toy Not integrated into syllabus-optional extra Technology precedes syllabus and learner needs	Whole CALL lesson	Separate lab – perhaps devoted to languages
Integrated Call	Word processing Email Any as appropriate to the needs	Frequent interaction with others students Some interaction with computer through the lesson	Frequent interaction with other students Some interaction with computer through the lesson	Facilitator / manager	Normal part of teaching - normalised	Tool for learning Normalised integrated into syllabus, adapted to learners' needs Analysis of needs and context precedes decisions about technology	Smaller part of every lesson	In every classroom, on every desk, in every bag

For the purpose of this study, the term normalisation of CALL is a state when CALL is fully integrated into the teaching and learning environment at UNTL. The introduction of the FLAX innovation at UNTL took place at the beginning of this process, which Bax (2003) called restricted CALL.

In their article about how to achieve normalisation in any educational context, Chambers and Bax (2006) outline a number of factors that need to be considered in CALL programmes during implementation. These issues were a result of a study of two contexts which sought to identify the contextual and other factors impacting on the normalisation of CALL. Chambers and Bax synthesised their findings and suggested a checklist of four categories that need to be investigated: logistics, consideration of stakeholders' knowledge, integration of CALL into the syllabus, and training and support for teachers.

The first element, logistics, is where consideration is given to the location of CALL facilities in relation to the normal teaching space, preferably allowing for easy movement between the two spaces. Computer use is within teachers' daily practice with planning and preparation time considered, as is the need for teachers and managers to upskill so that they are themselves confident users.

The second issue is the consideration of stakeholders' conceptions, knowledge and abilities concerning the role of computers in language learning. To reach a state of normalisation and integration, their worries, expectations and misunderstandings need to be taken into consideration. It is also useful to make stakeholders aware of the dangers of the 'technical fallacy', which is the view that the main determinant of success or failure is a single factor, such as the hardware or software or any other single factor.

The integration of CALL into the syllabus with integration of software is the next issue for consideration. Chambers and Bax (2006) consider that CALL should be properly integrated into the syllabus, and support provided for teachers who may be uneasy about their new roles. They recommend the use of 'authorable' CALL materials which allow teachers to tailor the CALL activities to fit the existing syllabus aims, as opposed to the use of imported closed materials.

The final set of issues involves training, development and support for teachers. They felt that this may best be offered in collaborative mode rather than in top-down expert-to-novice mode. Reliable support and encouragement are key factors to address teachers' concerns about technical failures and their skills to deal with them. They also consider that while technical assistance is important, it is insufficient on its own in supporting teachers towards fully normalising technology in their teaching as teachers also need pedagogical support (Chambers & Bax, 2006, p.476). The present study took these four categories into account, and they will be discussed again in Chapter Five.

2.2.1 Other commentators' responses to the concept of normalisation

Other commentators have discussed the concept of normalisation. For example, Ioannou-Georgiou (2006), in an online report from an international discussion forum on the future of CALL, outlined considerations arising from Bax's concept of normalisation. She said that CALL in many countries was still far from normalisation, one of the reasons being the range of technological resources and infrastructure available. Indeed, it soon became evident that "other factors, such as enthusiasm and motivation of teachers, seemed to have a larger impact on promoting CALL normalisation than money and equipment alone." (p.383) The forum identified factors that could help with normalisation: availability of appropriate hardware; appropriate software; easy access to technology; a 'top down' policy which worked well when there was plenty of administrative help from teachers; an integration of the technology into the syllabus and teacher training and support to teachers. Many other aspects aligned with Chambers and Bax (2006), such as the need for teacher training and support and integration with the syllabus. The forum's main contribution was to emphasise that a lack of appropriate hardware and basic equipment such as printers and computers could constrain the development of CALL.

2.2.2 Normalisation revisited

At a later time and indeed after my research space had been identified and the research conducted, Bax (2011) has revisited the concept of normalisation. His findings show that normalising CALL involves more of a socio-technological basis than implied in his previous writings. Bax questioned some assumptions that had arisen from his earlier writings: that normalisation would always occur, that it occurs to the same degree and progresses through the same steps, and that it is desirable that normalisation should occur. He stated that:

> The first concern when considering the use of a new technology in language education is to examine closely whether this technology will in fact deliver the expected benefits, or whether the same thing could be achieved by other means, perhaps at less expense or in a shorter time frame, or in a manner more in keeping with the social and cultural norms of the target setting and its teachers and learners. (2011, p.8)

Bax concedes that there may have been a lack of detailed theoretical grounding in his earlier publication and that other aspects of the concept needed addressing or clarifying. He restates his position on the technical fallacy and that simplistic assumptions about the power of new technology are not helpful. He says that a more balanced view is to accept that interactions between society and technology will be complex probably involving a number of factors interacting together [and says that]"if we are properly to understand the role of technology in society and in education, and of how technological change occurs, we need to accept that the interaction is... complex" (p. 3).

Bax (2011) says that a range of technical social factors bring about change. Similarly, when considering how technologies can become normalised in education in general and language education in particular, it must be done from a standpoint which allows the taking into full account of as wide a range of social and other factors as possible. Bax then cites Bijker (1997) and states that the debate on normalisation should be set within a resolutely social constructivist contextualist framework which is that "the economic, social, political, and scientific context of a technology is as important to its development as are its technical design

characteristics " (p.10). The implications of these later considerations for the present study will be addressed in the discussion in Chapter Five.

2.3 Digital libraries: CALL and FLAX

This section of the literature review describes the FLAX innovation and reviews some of the literature available about CALL, and the subsequent contribution of digital libraries to formal learning.

Marchionini and Maurer (1995) state that "digital libraries combine technology and information resources to allow remote access, breaking down the physical barriers between resources " (p. 69). Wu and Witten (2007) reinforce this point by identifying many advantages in using digital libraries for teaching and learning, saying that they provide a safe and reliable educational environment and are a great source of material that teachers can turn into meaningful language exercises. They offer vast quantities of authentic text so that learners can experience language in realistic and genuine contexts. Teachers can integrate digital libraries into classes that help students locate appropriate material, giving them the tools to study independently (p.2).

In the present century, CALL is increasingly being integrated into language learning activities both in and out of class. A continuation of all the previous areas has been seen, along with the growth of language learning applications and activities for mobile devices, especially mobile phones (Mobile-assisted Language Learning), the spread of Web 2.0 (Di Nucci, 1999), and experimentation with language learning in virtual worlds. The field of CALL is fast changing because the technology that helps to define it is itself changing rapidly. Hubbard (2009) encourages practitioners to look beyond the "growing edge," and says there are still valuable lessons to be learned in the field of emergent CALL. This comment relates to the original concept of this study, which was to leapfrog from relying on the print media for sources of knowledge to digitalised or electronic means, reflecting global changes taking place.

FLAX is part of a much larger Greenstone Digital Library software project developed at the University of Waikato which allows users of different computer operating systems to create their own libraries in electronic format for web

publication or distribution with CD or DVD. Witten and Wu (2007), the designers of FLAX, add further detail about the benefit of digital libraries to CALL. In the development phase they found a plethora of language learning resources on the World Wide Web, but the material was generally fixed by the system's operator and provided no facilities for teachers to engage and participate in the learning activity by supplying their own material. They constructed a digital library of language learning exercises that presents students with different kinds of exercises, and also allows teachers to contribute new material. They then developed the digital library system called FLAX, which has language learning activities as part of the extensible digital library, a key feature of which, and one that distinguishes them from ordinary websites, is the fundamental role that metadata plays in the organisation of the documents.

2.3.1 Learning to read in a second language and FLAX

The purpose of introducing the CALL application FLAX into this environment has a pedagogical goal, which is to facilitate or mediate the students' ability in reading English, which underpins their academic study. The main purpose of reading is to gain meaning from a text and a number of cognitive and metacognitive skills combine to make reading a successful experience. This successful experience in reading becomes a motivator for further reading which is in turn is essential for developing reading ability. Nuttal (1996) however recognises most students "do not really need to read in that (foreign) language except for classroom purposes" which may affect their motivation (p.3). The challenge for the teacher is to make their foreign language reading interesting and purposeful.

In considering second language acquisition from a discrete skills perspective Laufer (1997) discusses the lexical plight in second language reading and says that reading for a second language learner involves "words you don't know, words you think you know, and words you can't guess" (Coady & Huckin, 1997, p.20), and thus presents a view of some of the challenges for the reader of English whose first language is other than English. Laufer considers that no text comprehension is possible without understanding the text's vocabulary. She thinks that reading comprehension in both L1 and L2 is also affected by text reading

strategies such as predicting, guessing the unknown words in context, making inferences, recognising the type of text and text structure and grasping the main idea of the paragraph. She argues that "an improvement in reading comprehension can be attributed to an increase in vocabulary knowledge" (Coady & Huckin, 1997, p.20).

As to the effect of general reading strategies on L2 reading, the current view is that since reading in L2 is both a reading problem and a language problem some sort of threshold or competence ceiling has to be attained before existing abilities in the first language can begin to transfer, and that the most significant handicap for L2 readers is not lack of reading strategies but insufficient vocabulary in English. Laufer concludes that the threshold for reading comprehension is, to a large extent, lexical. She says that lexical problems will hinder successful comprehension.

Selection of suitable texts for second language reading is important. Nuttal (1996) argues that "the most important criterion is that the text should interest the readers" (p.170). The FLAX digital library can be built up of texts about subjects that interest the students, with either familiar topics about their own surroundings or other topics of interest outside their context.

There is a range of reading skills which may potentially be developed through FLAX: Reading for meaning skills are developed through the Word Guessing activity (see Appendix A and B). Students complete a cloze type exercise which develops semantic understandings. In this task students select the right word which necessitates reading ahead as well as considering what has been read already. "Helps" are available to scaffold the student if required. For example, beginnings and endings of words can be accessed. These tasks further develop their word attack skills and other syntactical knowledge. Reading to gain the gist is also developed as students read the story first to gain the general meaning of the text.

Lexical skills are also developed as students seek the right word to fill the gap, fulfilling their predictions or rejecting them. It is hoped that these lexical affordances in the application will assist students in retention of vocabulary and building their lexical threshold.

Sentence level skills can be developed through the Scrambled Sentences task (see Appendix C). This task gives students opportunity to physically move parts of a

sentence until they conform to English word order. Other features of sentence level skills such as punctuation give further linguistic clues in this task.

Predictive skills may be developed through the Predicting Words and Phrases task (see Appendix D). This exercise invites students to supply words and or phrases that may appear in the story. I would suggest students should have met the text already so that guessing comes from prior knowledge of the text. One benefit of the design of this task is the group nature of the task. Students can scaffold each other and work collaboratively or even competitively to complete the task.

Other affordances that the FLAX application brings are the possibility of graded texts and graded tasks. The teacher makes decisions about the capacity of the learners and adjusts these accordingly. The tasks can be further scaffolded by means of the 'helps' contained within the programme. The programme also allows for suitable contextualised material to be available to students, because this material can reflect their own reality rather than one of a foreign or external culture. Finally, tasks can be undertaken in an individual, pair or group setting.

2.3.2 Stakeholders' conceptions, knowledge and abilities relating to normalising digital libraries and FLAX

Chambers and Bax (2006) emphasise that it is important for all stakeholders, including both teaching and management staff, to be involved with the process of normalising CALL: teachers need "sympathetic support both technical and pedagogical" to integrate CALL into their teaching programme (p. 477). They say that other factors which expedite the normalisation of CALL are authorable software so that teachers can adapt the material to their students' needs, and also consideration of planning time for teachers – as indeed is the case with FLAX. They also recommend that management needs to enable the processes towards normalisation including provision of training, allocation of time for planning and professional development (Chambers & Bax, 2006, p.477). The important support given to the collaborative project by senior management at UNTL will be discussed in Chapter Five.

Another group of significant stakeholders in the normalisation of CALL not mentioned in the publications of Bax and his associates is the students. This group

can be identified as 'digital natives', as digital means of communication have been available throughout their lifetime: this is in contrast to most of the teaching staff – 'digital migrants'. Bennett, Maton and Kervin (2007), teaching at academic institutions in Australia, responded to what they call 'moral panic' by teachers to the IT skills exhibited by their students. These students were largely unaware they were interacting with technology, so accustomed or 'normalised,' as Bax would put it, were they to its use. Teachers were asking whether there should be widespread educational reform to address the learning requirements of the 'millennial' generation. After having surveyed students' use of the internet, Bennett et al. (2007) found a wide variation in usage across all sectors and "little evidence of the serious disaffection and alienation among students claimed by commentators" (p.781). They recommended a dispassionate and considered investigation into the claims about digital natives.

As elsewhere in the modern world, students in Timor-Leste are familiar with digital technology, using mobile phones and texting for daily interactions, and they engage in social networking if they can access a computer linked to the internet. In the early stages of the present study, it seemed likely that this facility with digital technology might assist them with taking advantage of the FLAX application and its CALL functions once other constraints presented by irregular electricity supply and inadequate computer facilities were addressed. In fact, it eventuated that students took to the innovation more readily than some of the teachers, as will be described in the presentation of findings in Chapter Four. Chambers and Bax (2006, p.475) say that among the key factors which can expedite the normalisation of CALL is authorable software so that teachers can adapt the material to their students' needs – and this is one of the most significant features of the FLAX application:

> This project has devised a flexible structure for a dynamic and open language learning environment, a digital library that is able to grow organically as teachers submit new material, in different languages, targeted towards fresh audiences of language learners. (Witten &Wu, 2007, p. 7).

The need for CALL to be able to adapt to each environment was signalled as long ago as 1989. Gueye (1989) acknowledged that there was resourcing and training difficulties to implementing CALL in developing countries, but encouraged teachers of English in Africa to develop their skills with technology and introduce CALL into their environment. He recommended that they develop their own courseware, adapting software programmes to the realities of the African social environment.

2.3.3 FLAX tasks and skills development activities

There are other tasks available on FLAX, but the four activities in Table 2.2 were selected. The reason for the choice of these task-types was that they are pedagogic activities familiar to both teachers and students at UNTL, and the most visible innovatory aspect is that they are used with computers, rather than pen-and-paper. The developers of FLAX have now published an E-book which gives details about the FLAX application and is available online (Witten, Wu &Yu, 2011).

Table 2.2

FLAX tasks selected for UNTL context

Task	Activity	Description
Scrambled sentences	word ordering	Students physically manipulate words on screen to form a sentence.
Word Guessing	cloze	Students find a word for a gap. These are either meaning-based or syntax-based activities. They contain 'helps' to scaffold the activity.
Predicting words & phrases	prediction	Students collaborate to predict words which they think will occur in a given text.
Completing collocations	Fill-in-the-blanks	Students fill in a blank to form a valid word combination.

Adapted from Witten, Wu and Yu, 2011.

The more profound innovation is that digitalised texts and FLAX tasks are able to be tailored to the students' academic needs or social interests. Collections of relevant texts can be directly lifted from open-source sites, copied or adapted from other sources (with formal authorisation from, and acknowledgement to, copyright holders), or they can be entirely authored by the teachers (and, as eventually

happened, by more advanced students). If necessary, they can be edited to meet the students' linguistic competence levels by calculating their relative difficulty using, for example, the Flesch-Kincaid scales available on a PC Word programme. The basic text types can also be adjusted for levels of difficulty in various ways. For example, the number of words to be scrambled in a sentence can be increased to make the task more challenging. As indicated in the screen shot below, the 'word guessing' tasks can be provided with 'helps' in various ways such as by providing the initial and/or last letters of each missing word, or by providing the list of missing words above the text. Further examples of FLAX tasks can be found in Appendices A – D. An example of how to create a task is found in Appendix E.
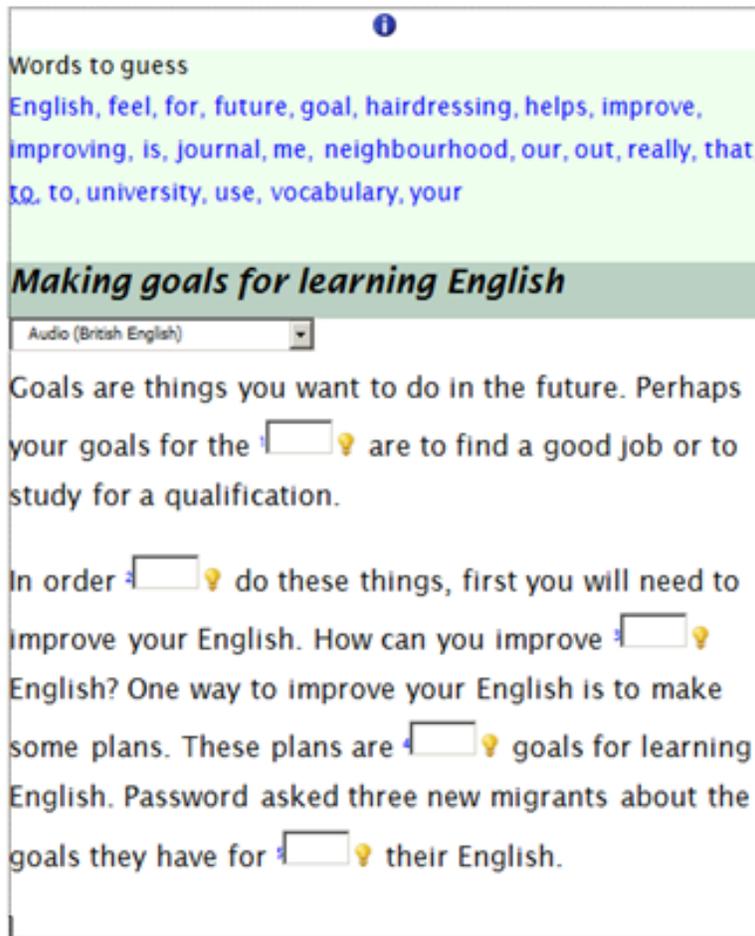
Figure 2.2

Sample portion of FLAX Word Guessing task with helps (Witten, Wu & Xu, 2011).

The present study, therefore, intended to place the teachers in the position of controllers and developers, rather than consumers, of certain aspects of the new curriculum, and to build upon and extend their growing confidence and competence. Before it could be assumed that they were ready to take this position, it was necessary to gauge their readiness and perceptions about this innovation and its impact – in other words, to investigate their beliefs and practices about curriculum issues.

2.3.4 Role of Teachers

Although mainstream education has long been aware that teaching is "substantially influenced and even determined by teachers' underlying thinking" (Clark & Peterson, 1986, p. 255), it is only since the late 1990s that the beliefs and knowledge of second language teachers has been empirically investigated. In his wide-ranging review, Borg (2006) discusses some seventy published studies into various aspects of language teacher cognition, including the teaching of reading, writing and grammar. Acknowledging that most of these studies were based in Europe and North America (only ten were in Asian contexts), Borg emphasised the need for more research into teachers' beliefs to be conducted in a greater variety of educational, linguistic and geographical contexts. He also concluded that it may be "more realistic and ultimately more productive to combine the expertise of Second Language Acquisition researchers and Teacher Cognition researchers in the collaborative study of ways of linking teacher cognition and learning." (2006, p. 288)

He developed a framework for language teacher cognition research with the aim of bringing some structure to the field of enquiry and of structuring his own enquiry. His framework outlines relationships between teacher cognition, teacher learning (through their own schooling and professional education and classroom practice), stating that in and around the classroom "context mediates cognitions and practice." Having established that teachers are a part of an ongoing development process and that there are multiple contributing factors to their language teaching cognition, attention is turned to establishing methods for establishing what instruments are suitable in this case study so as to undertake the development it is necessary to know where they are in their present thinking. He suggests four methods which may be useful in teacher cognition research:

observation, self report instruments, verbal commentaries and reflective writing (Borg, 2006, p.282). In the present study, and in the action research associated with the wider research project, some of these methods have been applied and found to be useful.

McGee (1997) explored the relationship between curriculum change and teacher development, stating that they are closely related and that "decisions are made in relation to professional expertise, so he maintained that the better prepared a teacher is, then the better the curriculum decisions will be." (p. 223) McGee argues that teachers should be at the heart of curriculum decision-making and therefore they need to engage in regular and ongoing development and education to maintain their professional expertise and, importantly, their credibility. Teacher development, according to McGee, brings about improvement in curriculum development and delivery and therefore in student learning, the essential outcome in curriculum development (McGee, 1997).

The concept of teachers as researchers has gained more recognition recently with the thought that any research needs to not merely investigate what teachers do, but to fully involve them in the collection and analysis of data. As agents of that research process, the status of teachers can move from 'passive technicians' (Kumaravadivelu, 2003, p. 8) to 'transformative intellectuals' charged with combining "scholarly reflection and practice in the service of educating students to be thoughtful, active citizens" (Giroux, 1988, p. 122). This thinking views teachers themselves as leading the change process. Teachers are now perceived as change makers in their own right rather than consumers of others' ideas. Allwright (2006), when discussing promising directions in Applied Linguistics, says that teachers more recently are increasingly being perceived as the people who will conduct the most productive research in the field.

Renewed interest has been shown in action research, which is based in the classroom and starts with identifying a practical problem which is then researched for a possible solution. Burns (1999) says that "because of its practical nature and focus

on immediate concerns, it holds particular appeal for classroom teachers and a promising direction for the building of theories related to teaching and learning." (p. 24) These processes are clearly linked to developing teachers' knowledge and developing them as teachers. However, Burns adds that a collaborative perspective on action research will fulfil the original intent of this type of research which is to "bring about change in social situations as the result of group problem-solving and collaboration" (p. 12).

Although this present study is my individual exploration, it involves participation and sharing by participants as they share their views on FLAX among themselves and with me. A further development of this collaboration and discussion were further action research projects through which teachers build their own capacity and find solutions for their own context. This participatory view on teachers' development suggests a constructive view of learning theory which involves collaboration and participation by all participants to form a collective view. The following section discusses and develops these ideas.

2.4 Constructivist Approach and Activity Theory

Van Lier (1996) introduces the concept of scaffolding as a way to "pull the students into challenging but attainable areas of work" (p.194). Bruner's original definition of scaffolding is that it is "a process of setting up the situation to make the child's entry easy and successful and then gradually pulling back and handing the role to the child as he (or she) becomes skilled enough to manage it " (Bruner, 1983, p. 60). A scaffolding approach is essentially about simplifying the learner's role rather than the task. Van Lier (1996) acknowledges that Bruner's work was with children rather than adults but states that "it is clear that as educators it is to our advantage to study ways in which the power of scaffolding can be brought into the classroom, particularly in areas of learning in which social interaction clearly plays a central role, such as in language learning" (pp. 195-6). The notion of scaffolding is described by van Lier as a dynamic process of working within the ZPD, and he lists a number of features or principles of the scaffolding process.

1. Repeated occurrences (the principle of continuity), variety and routine;
2. Activities structured to provide a safe but challenging environment (the principle of contextual support);
3. Mutual engagement, (the principle of intersubjectivity);
4. Elements in the activity can be changed, deleted or repeated depending of the actions or reactions of the participants, (the principle of contingency or responsiveness);
5. The learner is observed so that the teacher can hand over parts of the action as soon as they are ready (the handover principle); and
6. Actions of participants are orchestrated or synchronised so that the interaction flows in a natural way (the flow principle).(van Lier, 1996, p.195)

The process of conducting this present research, as well as introducing a new mediating tool, requires a scaffolded approach to teachers as learners who are being challenged as they engage in a new area of teaching and learning both personally and for their department. By engaging in workshops with the researcher about FLAX, they are able to explore these new pedagogical areas in a secure setting,

and then become confident enough to use the application with their students. The scaffolding approach represents a view of reality which is essentially constructivist.

Charmaz (2006) states that constructivism is "a scientific perspective that addresses how realities are made" (p. 187). She says that this perspective assumes that people, including researchers, construct the realities in which they participate. Constructivist researchers seek to "start with the experience and ask how members construct it. Constructivists acknowledge that their interpretation of the studied phenomenon is in itself a construction" (Charmaz, 2006, p. 187). Constructivist learning theory, which involves collaboration and participation by all participants to form a collective view of teacher development, seems an appropriate approach for this research.

Another framework which aligns well with constructivist learning theory is Activity Theory. Barnard (2009) cites Jonassen and Rohrer-Murphy (1999) who describe the sociocultural view of learning as a 'dynamic process' of active and reciprocal meaning-making. Learning is jointly co-constructed and mediated by cultural tools that are used to transform the environment. Viewing the teaching and learning processes through the lens of Activity Theory may yield some useful insights into building capacity at UNTL.

Activity Theory, which may be better described as a philosophical model or an analytical framework, was first initiated by a group of Russian psychologists in the 1920s and 1930s. Vygotsky, Leont'ev and Luria formed a new theoretical concept which challenged the prevailing view of psychology which was then dominated by psychoanalysis and behaviourism. In its simplest terms, an activity is defined as the engagement of subjects toward achieving a specific goal or objective. Human activity is usually mediated through the use of culturally created instruments, including language, physical artefacts, and established procedures. That activity is undertaken by human agents (subjects) who are motivated toward the solution of a problem or purpose (object), and mediated by tools (artefacts) in collaboration with others (community) (see Figure 2.3).

TOOLS AND SYMBOLS

| SUBJECT | | OBJECT | | GOAL |
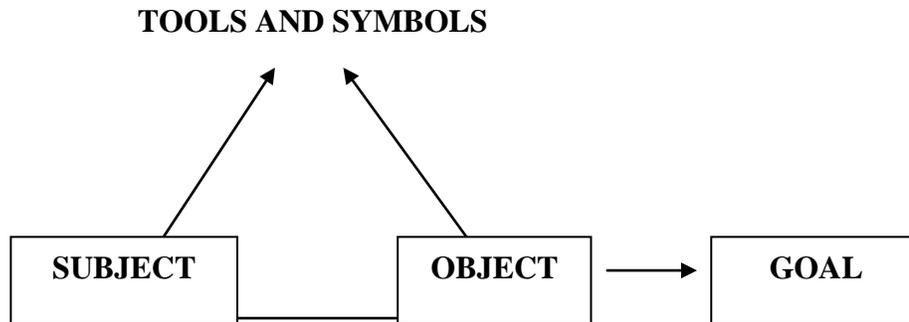
Figure 2.3

Original model of Activity Theory (Leont'ev, 1981).

2.4.1 Tools and Mediation

In Vygotsky's view, "a hallmark of human consciousness is that it is associated with the use of tools, especially 'psychological tools'" (Wertsch, 2007, p.178). Mediation builds a link between social and historical processes on the one hand, and the individual's mental processes on the other. Wertsch (2007) proposed that signs or mediating tools are "artificial formations that are social, not organic or individual and included under this heading was 'language, various systems for counting, mnemonic techniques; algebraic symbol systems, works of art, writing, schemes, diagrams, maps, mechanical drawings, and all sorts of conventional signs'" (Wertsch citing Vygotsky, 1981).

Wertsch (2007) argues that from a Vygotskian perspective, the process of mastering a semiotic tool usually begins on the social plane. Vygotsky says that higher mental functioning appears first on the intermental and then on the intramental plane, and that the first stages of acquaintance typically involves social interaction and negotiation between experts and novices, or among novices. It is precisely by means of participating in this social interaction that interpretations are first proposed and worked out and therefore, become available to be taken over by individuals (pp. 186-187).

2.4.2 Vygotsky and the Zone of Proximal Development (ZPD)

Vygotsky also contributed a theory which still guides modern teaching principles and practices and has some resonance for this study. The zone of proximal development is defined as "the distance between the actual level of development as determined by independent problem solving (without guided instruction) and the level of potential development by problem solving under adult guidance or in collaboration with more capable peers" (as cited in Daniels et al.,2007, p.278). Vygotsky formulated the concept of the ZPD in order to deal methodologically with the need to anticipate the course of development or the learner's potential. He said that students' unexpressed ability could be measured by the extent to which they profited from guided instruction. That guidance is needed to acquire a new language is self-evident but Vygotsky emphasises the social element of instruction, writing about the unique form of co-operation between the child and the adult as the central element in the educational process.

The question then arises for the practitioner of how to utilise knowledge about the ZPD in practice. Van Lier (1996) argues that productive work in the ZPD for language education involves interactions taking place through intrinsic motivation, engagement and, particularly in the case of adults, self-determination. The variety of resources include assistance from more capable peers and adults; interaction with equal peers; interaction with less capable peers (we learn by teaching); and inner resources (van Lier, 1996, p.193). These interactions all utilise to varying degrees van Lier's three curriculum principles of awareness, autonomy and authenticity.

The introduction of a new mediating tool into this setting was essentially a social construct which included a wide range of interactions. The various participants in the present study co-constructed their understanding of the new tool using a variety of interactions including scaffolding, discussion, and other interactions. These interactions were between both capable and less capable peers, and between equal peers. The interactions which took place in pairs or in groups helped the process to become explicit, as participants shared their perspectives throughout the process of becoming familiar with the new mediating tool. In terms of activity theory, the

activity took place between the three intersecting nodes of subject, tools and object with the expected outcome of increased language learning capability for students.

In order to progress the development of Activity Theory, Engeström (1987) later expanded Leont'ev's original triangular representation of the activity system. See Figure 2.3 on p.38. According to Daniels, Cole and Wertsch (2007), he did this to enable an examination of systems of activity at the macro-level of the collective and the community in preference to a micro-level concentration on the individual agent or actor operating with tools. This expansion of the basic Vygotskian triangle aims to represent the social collective elements in an activity system, through the addition of the element of rules and divisions of labour within the communities of practice, while emphasising the importance of analysing their interactions with each other. Figure 2.4 is a diagram of the context of the study from Engeström's expanded model of Activity System. The expanded model shows the interrelatedness of each activity site. In the present study, all of the nodes are focused on the object (successful language learning) in order to fulfil the degree requirements of the course of study at the university (the outcome).The subjects (teachers and students at UNTL) are assisted by the mediating tools of language (oral and written), text books which include the new innovation FLAX. Other activity nodes are the community of influence, the rules which may include informal orders referred to earlier in the chapter, the distribution of resources, and the division of labour. The study will examine how these nodes interrelate and influence the activity as the expanded model of the activity system brings in wider perspectives that influence activity. Many of these are from outside the classroom and may introduce complexity into the activity.
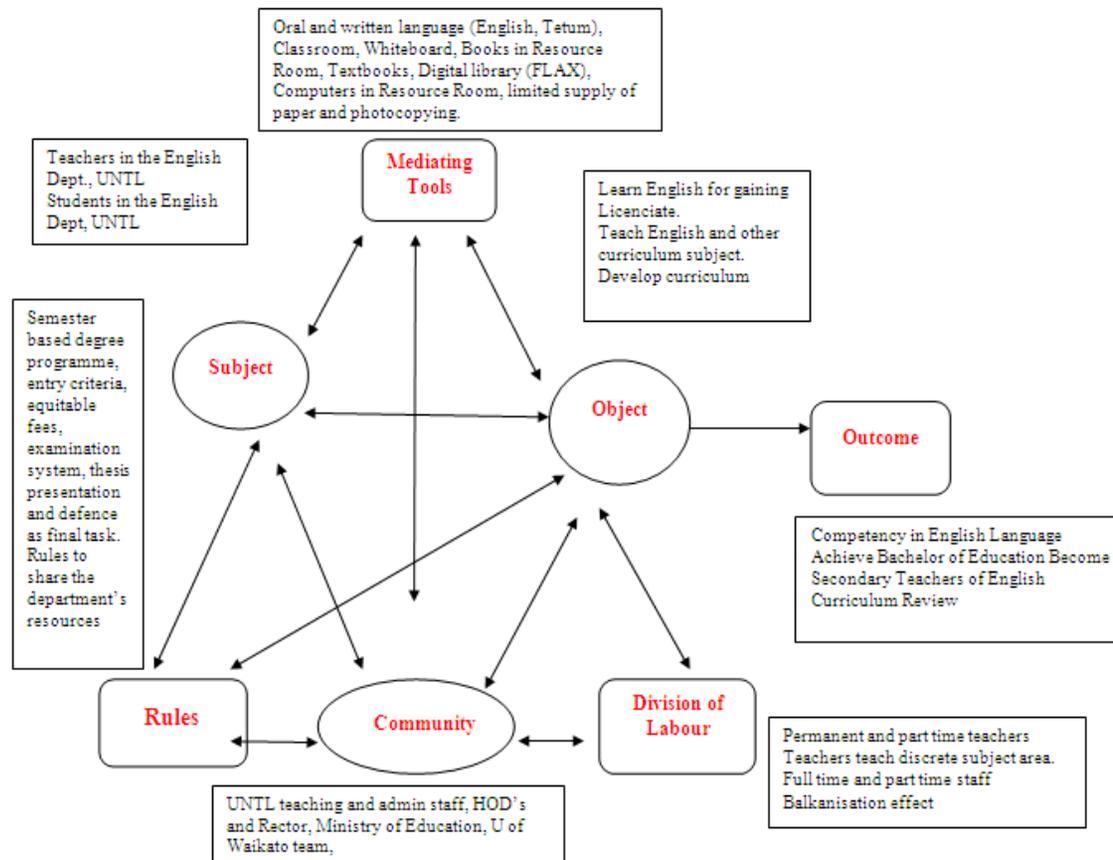
Figure 2.4

The context at UNTL: (Adapted from Engeström, 1987, p.78).

Thus, a neo-Vygotskian approaches which focuses on social constructions, constructing thought and meaning, is a framework that will be utilised to view the activity at the site. The research visit itself gives ample opportunity for activity in the form of workshops, focus groups and paired oral reflections.

The activity is a scaffolded approach to support teachers to learn the application. The teachers themselves will then scaffold the process with their learners.

Through Engeström's expanded framework, it will be possible to view the elements of activity and how the nodes interact. This will allow a view of the complexity of the activity as the activity is viewed through a pedagogical lens but also through a socio-historical lens.

These social constructions will be revisited in Chapters Five and Six, when the findings from the study illuminate the interrelatedness of the activity at the research site from the perspective of the teachers and the classroom, but also from Engeström's expanded model or wider perspective. The implications of this wider view will be explored.

2.5 Research Questions

The study investigates these questions.

(a) What are the teachers' initial perceptions (and apprehensions) regarding the introduction of a Computer Assisted Language Learning innovation called FLAX into their environment, towards facilitating their classroom activity, and that of their students?

(b) To what extent are these attitudes changed as a result of the intervention of this project?

(c) How do the resulting understandings contribute to our understanding of normalisation of CALL into this environment?

2.6   Summary of the Research Design

This study is a case study of the introduction of an innovative CALL programme, FLAX, to the English Department of the National University in Timor-Leste. This case study is embedded in a wider inter-university curriculum development project. It investigates teachers' perceptions and ideas of this innovation from introduction to implementation stage.

The key framework for the study is the concept of normalisation (Bax, 2003, 2011; Chambers & Bax, 2006), viewed through the context of sociocultural theory and, in particular, Activity Theory. A variety of methods to collect data from participants were selected. These were focus groups and oral reflective journal collections by the students, and a daily reflective written journal was kept by the researcher while on site. The rationale for these methods and procedures will be explained in the next chapter. The challenges associated with curriculum change have been acknowledged, and the cultural needs and aspirations of the participants in the study have been considered as part of the ethical considerations prior to the data collection process.

Chapter Three Research Methods

3 Introduction

This chapter begins with a discussion of quantitative and qualitative approaches to research, and the reasons why the latter was selected as the most appropriate paradigm for this study. This is followed by a consideration of the nature of case study as a framework, and a brief outline of why this study may be deemed to be ethnographic (Section 3.1). In Section 3.2, the specific research setting will be explained in terms of the overall purpose, the pedagogical and physical setting, and the participants. Section 3.3 outlines the various data collection procedures of the study: the use of oral reflective journals and focus groups to capture teachers' thoughts and impressions, and the contribution of a daily journal which was kept by the researcher. The next section shows the original schedule of data collection and the subsequent changes made to that section in the light of the constraints and opportunities which unexpectedly occurred in the setting. Section 3.4 explains how the data were analysed. The chapter concludes with a brief summary and a preview of Chapter Four.

3.1 Research design

3.1.1 Quantitative and qualitative research

Quantitative research involves collecting primarily numerical data and analysing them using statistical methods. It uses sampling techniques where findings may be expressed numerically, and are amenable to statistical manipulation, enabling the researcher to generalise from the data and predict future events or quantities. Heigham and Croker (2009) state that a quantitative theoretical framework takes a positivist approach, a belief that there is one reality and that researchers should focus their work on finding singular universal truth. Quantitative researchers consider that this reality can be quantified and that research should measure this reality. The role of the researcher is to hypothesise what will happen in the future in a detached and objective way (Heigham & Croker, 2009, p.6). The aim of the present study is to explore perceptions of the participants within a specific and natural context rather than attempt to objectively measure any aspect of their teaching or learning, so a qualitative approach has been adopted.

According to Merriam:

> The key to understanding qualitative research lies with the idea that
> meaning is socially constructed by individuals in interaction with their
> world. The world, or reality, is not the fixed, single, agreed upon, or
> measureable phenomenon that is assumed to be in positivist,
> quantitative research. (2002, p. 3)

The constructivist view of reality is that there is no universally agreed upon reality or universal truth, and that meaning is socially constructed by individuals. Each individual constructs his or her own reality and these constructions change depending on time and circumstances so that reality is bound by person, context and time. With specific regard to its application to applied linguistics, Heigham and Croker (2009) suggest that qualitative research is a broad "interdisciplinary field of study which focuses on language in use, connecting our knowledge about languages with an understanding of how they are used in the real world" (p.4).

Thus, the focus of the present study is on the participants, and how they perceive reality at a given point in time and in a particular context, and the multiple meanings this has for them. Because the participants in the present study are few, and the context in which they are studied is bounded by the institutional setting in which they work, a case study approach was considered appropriate as it would provide "a particular concrete instance of a phenomenon, where researchers might conceivably find relationships among variables or factors of interest" (Duff, 2008, p. 34).

3.1.2 Case Study

Although quantitative procedures or a mixture of qualitative and quantitative methods can be carried out within case studies, researchers in applied linguistics now usually adopt qualitative methods. Heigham and Croker (2009) argue that this trend towards the use of case studies in applied linguistics is "a response to the recognition that the questions researchers seek to answer are complex" (p. 67). A case study approach assumes that researchers are seeking to understand phenomena not in general terms, but through close examination of the particular which involves material that is "rich, real and human" (p. 67).

Duff (2008) agrees that case studies in applied linguistics are usually associated with interpretive qualitative research, the case usually being the individual language learner, speaker, or teacher. However, a case study may also deal with larger units such as an institution, a class, or a group of teachers, the essential features are that the elements or components are bounded. Heigham and Croker (2009) argue that the boundary provided by a case, supplies a framework for analysis of such material, although Yin (2003) argues that a case study may be analysed quantitatively as well as qualitatively in a mixed-method approach. Yin (2003) also identifies that there are three types of case studies: exploratory, descriptive, and explanatory. An exploratory case study is aimed at defining the questions and hypotheses of a subsequent study. A descriptive case study presents a complete description of a phenomenon within its context, and an explanatory case study presents data which focuses on the cause-effect relationships, or explains how events happen (Duff, 2008, p.32). The present study is primarily descriptive in that it seeks to illuminate the development of learning among the participants in terms of the growth of their understanding of the principles and procedures of computer-mediated learning with the FLAX and Greenstone facilities. In doing so, it also seeks a grounded explanation for some of the attitudes and beliefs that are expressed. It may also be considered as exploratory as it lays the ground for subsequent investigation into how the participants eventually implemented the procedures.

According to Duff (2008), the key recurring principles in case studies are "boundedness, in-depth study, multiple perspectives or triangulation, particularity, contexualisation and interpretation" (p.23). These features are essentially present in this study. However, case studies need not be ethnographic although the two concepts are so very similar, as will be explained below, that it is claimed that the present study is, indeed, an ethnography – albeit of a limited kind.

3.1.3 Ethnographic approach
Ethnography as a form of social research has been described as having a substantial number of the following features:

- a strong emphasis on exploring the nature of a particular phenomenon, rather than setting out to test hypotheses about them;

- a tendency to work primarily with 'unstructured' data, that is, data that have not been coded at the point of data collection in terms of a closed set of analytical categories;

- investigation of a small number of cases, perhaps just one case, in detail;

- an analysis of data that involves explicit interpretations of the meanings and functions of human actions, the product of which mainly takes the form of verbal descriptions and explanations, with quantification and statistical analysis playing a subsidiary role at most.

(Atkinson & Hammersley, 1984, p. 248)

Duff (2008) says that a case study "focuses on the behaviours or attributes of individual learners or other individuals / entities, [and that an ethnographic study aims to] understand and interpret the behaviours, values, and structures of collectivities or social groups with particular reference to the *cultural* basis for those behaviours and values" (p. 34). There is, therefore, a close fit between case study and ethnography. However, while case studies, particularly explanatory ones which seek to define or refine hypotheses for future study, may be carried out by outside, neutral researchers, the emphasis in ethnographic inquiry is on the interpretation of reality, individual values and interaction between participants. The researcher spends time in the setting and knows the participants of that culture in order to see the situation from the participants' world view or paradigm, and thereby gain an insider's perspective on events, actions and attitudes. In short, the researcher becomes a participant in the research.

However, Heigham and Croker (2009, p. 97) state that "an important criterion for a researcher is to maintain an emic (insider or participant perspective) and an etic (outsider or researcher's perspective) position simultaneously." They say that by adapting the participants' perspective, the researcher learns to understand certain cultural practices from the inside. While maintaining this -emic view, it is also important to hold an impartial view as a researcher to be able to analyse and interpret the findings in a distanced or outsider's position. The question then arises as to whether a researcher could ever be a complete insider and even whether this is useful for a researcher.

3.1.4 Present investigation as an ethnographic case study

As stated previously in sections 1.5 and 1.6, my contact with UNTL began on an assignment as a volunteer in 2005-6. My duties then included assisting the teachers at the university to develop the curriculum and to assist them with teaching methods. We also collaborated to open a modest reading resource room near the English department. In addition, I assisted with undergraduate thesis examinations as an invited guest examiner. I consider that working within the existing teaching processes and procedures, and the day-to-day contact with both teachers and students, and understanding the hopes and aspirations of both gave me an insider view. I attempted to leave aside my pre-established views from my background of language teaching in New Zealand and to be open to new models of teaching and learning. I think I may to some extent have succeeded in this endeavour and become a team member, if only for a short time.

I do consider that expatriate volunteers can bring benefits to their host institution. They bring a world view to the site which can be used to support development, and perhaps new understandings and skills to share with their local counterparts. They have connections with valuable stakeholders outside the institution and country which can be used for the benefit of those on site, such as obtaining learning and teaching materials and equipment. However, I also consider that expatriate volunteers can never be fully insiders. Although they may spend every work hour on site and socialise with their colleagues, and even though they may learn the language, they remain outsiders in many aspects of the culture and history. The short-term nature of such an assignment may lead to pressures to bring about premature changes within the setting which may actually constrain longer-term improvements. Ultimately, of course, the volunteer returns home. Although I did not know it at the time, I was to return to UNTL three years later as a member of the wider research project outlined in Chapter One, of which the present study was a small part.

My research status on my return to the research site in 2009 was that of a partial insider. A certain level of trust had been established during the voluntary assignment, as the teaching staff and I had shared a number of spaces with the teachers, both physically and professionally and, to a more limited degree, socially. The task for me returning to the site as a researcher rather than an external volunteer was to balance the insider perspective and the outsider

perspective which is essential, so that enough distance was established from the participants to ensure the validity of the data.

3.2   Research context
3.2.1   Purpose of the study

As noted previously in sections 1.6 and 1.7, participants in the wider inter-university curriculum project, in responding to a scarcity of paper-based resources in the setting, thought that the idea of introducing digital libraries with accompanying language learning tasks may have some merit. The purpose of this research was to uncover the perceptions of the teachers in relation to the FLAX application's usefulness to the teaching and learning process at UNTL.

3.2.2   Ethical issues

Letters inviting teachers to be participants in the research were part of the Human Research Ethics application process, as were letters to the Rector, Vice Rector and Dean of the Faculty of Science and Education of the National University of Timor-Leste. The ethical application process at the University of Waikato was approved on 1 April, 2009. The introductory letter seeking permission and access was then forwarded electronically to the Rector, Vice Rector and Dean at UNTL in June 2009. Electronic communication received from the Vice Rector subsequently gave consent for the research to take place. Letters of informed consent were distributed to ten participants on arrival at the site on 3 September 2009. These were signed and collected by the end of the first week of the visit. Copies of letters to the Rector, Dean and participants are provided in Appendices F, G, and H.

3.2.3   Time frame

The visit to the site took place over six weeks, from 3 September, 2009 - 10 October, 2009. The data collection was framed by three workshop sessions for participants where the principles and procedures of FLAX were revisited. The objective of holding workshops was to provide input and build some confidence in relation to the programme. The workshops provided a focus for the oral reflective journals. In between workshops, participants were invited to undertake three oral reflective journalling discussions with another participant. Five pairs of participants were given a recording device and a sheet which contained four questions for discussion.

In Week One and Week Six focus group discussions were held. In Week One there were two groups, each with four participants. The primary purpose of the first groups was to gather some initial views and to familiarise them with the questions they would be asked in the forthcoming peer discussions. In Week Six, there were four participants who were a mixture of participants from both focus groups held in Week One.

I kept a daily written researcher's journal where activities of the day and reflective field notes were logged. The purpose of keeping a journal was twofold; to record the chronological order of events but also to record thoughts, impressions and feelings about the process.

3.2.4   Physical context

Although it was convenient for the focus groups to be held in the teachers' room, the oral reflective journals were actually recorded by the teachers in places and at times that suited them. The journals were collected a week after their distribution to each pair, and the third set of oral reflective journals were collected in Week Six.

Teachers were asked to record further reflections after three months by which time the students would have used the application upon their return to UNTL. The fourth and final collection was made three months later, when a member of the collaborative team returned to the site. By then, the students and teachers had had time to become familiar with the application which was installed in both the teachers' room and the resource room. The team member interviewed four of the participants as well as talking to two sets of students who were using FLAX.

The students remain peripheral to this investigation but those that were at the campus were interested in the innovation, one student being responsible for the daily supervision of the resource room. At the time of the visit, the university teachers were in a non-teaching phase and were preparing for three months of lessons to strengthen their capacity in Portuguese language. The majority of students were on a mandatory vacation.

3.2.5   Participant profiles

All teachers in the English Department at UNTL were invited to join the research and ten teachers agreed to participate and gave informed consent. Of the

participants, two were part of the administration, the Head of Department and Dean of the Faculty (although they undertook teaching duties as well), five teachers were on the permanent staff, and three were part time teachers. The qualification awarded by UNTL to their graduates is a Licentiate in Education. The university is supporting their teachers' professional development, so that in time all the teaching staff will hold a Master's Degree. Since the research in 2009, two of these teachers have left to study in Portugal. Others have attended further study in Australia and New Zealand.

Table 3.1

Participants' demographic information

Participant	Teaching responsibility	Qualifications	Status
1	Instructional design, Microteaching	Master in Educational Leadership,ACU Brisbane	Permanent teacher Taught in secondary schools and non-formal settings for many years
2	Translation, Language testing	LS Pd.	Permanent teacher Presently studying in Portugal.
3	Teaches a number of subjects including Academic writing	Master in Educational Leadership, ACU Brisbane	Permanent teacher Head of Department and teacher
4	Structure	LS.Pd. Grad.Dip.AppLing.	Part time teacher. Taught in secondary schools and non-formal settings for many years
5	Listening	L. Ed UNTL	Permanent teacher
6	Vocabulary	L. Ed UNTL	Part time teacher
7	Reading / Speaking	L.Ed UNTL	Permanent teacher Presently studying in Portugal
8	English as a Foreign Language Teaching and learning strategies	L.Ed UNTL Grad Dip TESOL UNE	Permanent teacher
9	Vocabulary	L.Ed UNTL	Part time teacher
10	Speaking	Master in Educational Management, ACU Brisbane	Dean of Faculty

3.3 Data collection: Rationale and procedures

The data collection process proceeded according to the plan but with some adaptations which are noted in section 3.3.5. These were adjustments made at the time and according to the circumstances that arose on site. The major unexpected event was the announcement by the Ministry of Education that there would be three months of intensive professional language development for all 7000 teachers in Timor-Leste between October and December 2009. This period of intensive tuition commenced shortly after my visit ended, and during my visit preparations were being made for the event and there were no classes taking place. This change worked well for the collection of data because many of the permanent teachers were at the university and more available and accessible than they might have been, had there been classes to teach. The original intention had been to introduce FLAX while classes were in session but this was not possible.

My reflective journal shows that, on the whole, the mix of workshops and data collection went according to plan. There were technical difficulties in the first week when installing the application on the computers. The fault was found to be with the software in the computers and was not associated with FLAX, but it meant that the application did not successfully install on three of the desktop computers in the teachers' room and on one computer in the resource room. Eventually, it was installed on one computer in the resource room and three computers in the teacher's room which gave enough access to run the workshops.

3.3.1 Oral reflective journals

An effort was made to find a suitable fit between the data gathering procedure and the participants. Gathering teachers' thoughts and perspectives in a naturalistic way suggested some form of reflective journalling. The use of oral reflective journals involving a face-to-face discussion between peers has not been widely discussed in the relevant literature, much of which focuses on written journals, but it seemed to suggest itself as a method that would be appropriate. The following research projects undertaken with participants for whom English is an additional language demonstrated that, although there was some value in recording thoughts and ideas or perceptions, most of the journals revealed only a small amount of analytical analysis and introspection.

Richards and Lockhart (1994) suggest that teachers' written journals serve two purposes: firstly, the recording of events and ideas facilitates later reflection; and secondly, the process of writing itself helps trigger insights about teaching, and so writing in this sense thus serves as a discovery process. Richards and Ho (1998) introduced journal writing as part of their in-service course for second language teachers. The results of their study suggested that although journal writing can provide an opportunity for teachers to write reflectively about their teaching, in itself it does not necessarily promote critical reflection as teachers differ in the extent to which they can write reflectively.

Nayan (2003), when trialling reflective journalling with pre-service teachers in Malaysia, found that there was limited value in their written reflections as "most of their writings were general or specific layer comments made without looking at the consequences or implications"(p.2). Dwyer (1994), who taught in an ESP environment, found that "feedback obtained from students' writing journals came in the form of fragmented sentences"(p.10). In an action research

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project, he went on to collect their views about a new course in an oral journal and found that "substantial information was derived and that the method is useful for tapping students' perceptions which might not otherwise be revealed" (p. 19).

Barkhuizen (1995), after using journalling with pre-service students for self-reflection and awareness, found that although journalling was widely accepted, "not all students enjoy journal writing" (p.25). He found that some students found the genre difficult and others had concerns around the audience of their journals.

More recently, Barkhuizen and Wette (2008) have used 'narrative frames' as an alternative to reflective journals, to ease the burden of writing lengthy journal entries, especially in contexts where such journals are an unfamiliar practice. Moreover, many of the studies which have requested participants to write - especially in a language other than their own - seemed to yield rather limited data. As an alternative, Richards and Lockhart (1994) suggested, "some teachers prefer to audiotape their responses to teaching, keeping an 'audio journal' rather than a written journal" (p. 7).

In the present study, I wanted to capture impressions from a number of sources, but appreciated the points made in the literature that written journaling may have some limitations for those writing in a language other than their own. I was also keen to gather perspectives where I was not part of the process. I considered that two people talking together about the application with some written questions to guide them enhanced the chances of gathering valid feedback. These reflections in real time could capture some of their responses and insights as they occurred. In addition, an oral journal seemed to be more naturalistic, as participants are from an oral tradition.

Before the present study, the oral reflective journals were initially piloted with fellow students at the University of Waikato. Three pairs trialled the method having a discussion together over a topic of current interest in applied linguistics. The information sheet for those involved is provided in Appendix I and the letter seeking their permission is found in Appendix J. Findings from the pilot studies showed that oral reflective journals were a useful way of gathering perspectives. My fellow students thought that when I undertook the research, that building a rapport with participants would be essential to put them at ease. They also advised me to consider ways of encouraging the participants to be frank in their assessment of FLAX. They thought that the process of using oral reflective

journals to capture thoughts and perspectives seemed to be natural. The piloting assisted me to explore the technical side of the data collection and also to consider wording of the focus questions, as participants emphasised the need for clarity. Piloting the oral reflective journals gave me confidence to anticipate some of those difficulties that might arise in the setting and to predict how I might respond to them.

Oral reflective journalling presented itself, therefore, as a key data collection method. The journals would be made by pairs of teachers in the department as they met each fortnight to share their perspectives on the application by having a discussion following a set of open-ended focus questions which were recorded on audio tape. Teachers were given the opportunity to reflect in the indigenous language Tetum (L1) rather than in English (L2) if they wished. Oral reflective journals use aspects of verbal reports which involve thinking aloud and diaries (oral rather than written).

To provide a framework for the oral interviews, I provided a set of questions to the participants. These questions, while providing a guide, also allowed me to be physically absent from the discussions. I felt that my presence might unduly influence the responses from the participants. The open-ended pre-prepared questions were used both by participants in the oral reflective journal discussions and at the focus groups. The questions are shown below.

In pairs ask and answer these questions together. You could answer them one by one or have a discussion together about each one
Describe what you have done with the FLAX application this week.
What was interesting for you?
What was difficult for you?
What do you plan to do next week with FLAX?

3.3.2 Focus groups

The use of focus groups is a useful tool for data collection as it can be facilitated so that it 'avoids undue imposition' from the researcher, and is a means to explore opinions and attitudes, particularly from the same speech community. Li and Barnard (2009) say that the use of focus groups can be the sole or supplementary source of data, and there is a growing body of recent and useful literature arguing that a focus group facilitates "gaining insights into the ways in which individuals are influenced by others in a group situation" (p.20), which is not so easily explored in individual interviews. They suggest that focus groups can be used both for such analysis of group interaction and also to bring forth new information created by the group in discussion, either as preparation for subsequent data collection or to triangulate data already collected by other means. If focus groups are comprised of members of the same speech community, they can serve not only as a means of data collection but also as a way of clarifying meanings and co-constructing shared understandings of the group's activity. However, such dialogues may also be also influenced by power relationships within the institution and this may affect what is said, and what may not be said. Gladman and Freeman (in press) agree that focus group methods have become widely used because of their "effectiveness in eliciting a wide range of relevant ideas and observations with respect to a given research topic," as the effects of synergy on group interaction can prompt more relevant responses than might be gained from one-on-one interviews.

In the present study, the focus groups were utilised for three of these purposes outlined in the literature. The first was to gather some baseline data about the perspectives of the teachers early in the data collection. The second was to facilitate co-construction of ideas as they built on each other's ideas in the group. The third was to provide triangulation for the other methods of data collection, namely the oral reflective journals and my reflective journal. The intent was to compare and contrast data gained from these methods. I did not undertake piloting of the focus groups as prior to my research visit, as three of the participants had paid a visit to University of Waikato and taken part in focus groups as part of the wider project between UNTL and Waikato.

An addendum to this description is that the use of these two methods, oral reflective journals and focus groups, was perhaps the first formal occasions that teachers' opinions and thoughts had been canvassed in a structured way, and

where they had had the opportunity to share and develop ideas that could impact positively on their department. One of the explicit aims of the wider curriculum project was to develop an effective community of practice, to share ideas and experience about teaching, research and publications. By 2010, three Action Research Groups had been established within the department to study various aspects of teaching and learning. The findings from two of these groups were disseminated at the English Education in South East Asia Conference in 2011and subsequently published. (See section 1.4).

3.3.3 Researcher's journal

Borg (2001) says that although reflective journals are acknowledged as tools for both pre-service and in-service teacher development, little had been written about the role reflective writing has as a tool for researchers in illuminating the research process. Borg used journal writing to document his personal experience of the research process and used the term 'journal' to refer to research-focused reflective writing by researchers. Between 1994 and 1998, Borg kept a reflective journal of 160,000 words for a study he was carrying out on teacher cognition. He used four extracts from his journal to show how the journal helped to confront issues, as the act of expressing his concerns and examining feelings led to reworking of solutions which enriched the research process. He agrees with Schön's view that systematic reflection is a learned activity. He suggests that reflective journal writing enables researchers to "develop greater levels of metacognitive awareness and reflective depth"(Borg, 2001, p.170).

He describes the benefits of reflections for the researcher both as a writer and a reader and also in terms of product and process. He shares the reflective processes at work in his journal suggesting that research journals have an important role to play in:

- articulating and rationalising concerns and exploring solutions;

- acknowledging, expressing and examining feelings;

- describing events and procedures;

- establishing goals, formulating plans, and deciding on actions;

- describing and evaluating progress (or lack of it);

- clarifying concepts and their implications for the research;

- capturing, exploring and pursuing ideas;

- structuring thoughts (Borg, 2001, pp. 169–170).

I began my journal before I arrived on site, outlining some goals I had for the project. The daily journalling started when I arrived on site and Borg's ideas informed my journalling. Each entry began with a narrative of the key points of the day's events and went on to note points of concern, positive points and points for the future. The journal proved helpful at the time as there were many variations to the process and recording these seemed to be one way to manage the variables. (Sample journal entry in Appendix K).The points made earlier in my literature about reflective journals refer to pre-service teachers who are writing in a language that is not their own, and are supporting a rationale for oral means of reflection rather than written means, and are not applicable to this section.

3.3.4 Schedules of the original anticipated data collection and summary of data collection at site

Two tables can be found below which summarise the data collection procedures. The first table, Table 3.2 summarises the original schedule for data collection in the left hand column. This schedule was approved in the Human Research Ethics application. The right column summarised what occurred during the field visit, and the contingencies taken to respond to changes that arose during the site visit. The second table, Table 3.3, is a weekly schedule which details the complete collection of data on site and incorporates the unanticipated changes.

The onsite schedule followed the plan quite closely. However, there were several unanticipated changes that varied from the HRE schedule. The key change related to the setting itself.

1. *The setting.* The changes to the university calendar, which occurred just before my visit, resulted in some benefits to the process, as teachers were perhaps more available for workshops and data collection procedures than may have been the case had they been occupied with teaching.

2. *Frequency.* There were three collections from oral reflective journals made at the site rather than four collections as outlined in the plan. On

reflection, three collections was probably the optimum number considering the number of communications that needed to occur to gather one collection.

3. *Languages used.* Two participants recorded their first recording in English, and then chose to record in Tetum language for the remaining collections.

4. *Workshops held.* Workshops were not originally envisaged, but it became clear once at the site that they would be very useful. The teachers were available to attend them, and I thought that by offering workshops it would make the research process seem a more balanced process, as I was contributing and being involved in the process, at the same time as I was asking for their participation. The workshops sessions were planned on site. The worksheets provided to the participants can be found in Appendix L.

Table 3.2

Original schedule and actual site schedule of data collection activity and procedure

	Original Schedule	Actual site schedule
The setting.	The visit will take place over six weeks from 1 September to 9 October 2009, during the September to February semester as outlined in Human Resource Ethics application.	The visit should have taken place during the September to February semester, but shortly before the visit the university calendar year was changed to align it with the Australian university calendar to begin in January. The students were on holiday at the time of the site visit, and teachers were preparing to attend intensive Portuguese language instruction from October to December 2009. I was made aware of these changes when I arrived, but the changes, in fact, supported my data collection procedures in that teachers were required to be at the campus. They were available for workshops and the data collection process, although there were one or two exceptions.
Group meeting	Prior to this (July) the participants will be invited to discuss their initial perspectives of the FLAX tasks and activities. This will be recorded on an audio recorder.(Professional development workshops with teachers to develop competency in using FLAX and linking it to the Curriculum *(from HRE proposal)*	In June 2009 FLAX was introduced to participants by colleague from Waikato in a workshop setting, but initial perspectives were captured informally rather than on audio recording.

	Original Schedule	Actual site schedule
Oral reflective journal:	To gain perspectives from the teachers the researcher will ask participants to keep oral reflective journals. The decision was made to keep an oral journal rather than a written one as it was felt that an oral journal was more suitable in this environment as the participants will be able to express themselves more readily through oral rather than written means. From week two, tape recorders and empty cassettes will be given to the participants together with focus questions (four collections). The participants will be invited to meet together at times and places that suit them and answer the prepared questions. They can either answer them individually or have a discussion about them which will be recorded. The researcher considers that having pairs of participants may be more natural for them rather than talking to the recording device individually. *(from HRE proposal)*	I had hoped to gather five pairs of recordings from the ten participants. The result was that three collections were gathered at each collection rather than the anticipated five. There were a number of reasons for this. The university was in a non-teaching time and students and some teachers were absent from the university. Most of the permanent staff were available but some had other priorities: one of the participants got married during this time, another had urgent family duties to attend to, and two others had part time jobs. As a contingency, I decided to capture three teachers' impressions in individual interviews using the same set of focus questions as in the oral reflective journals with three individual participants.
Individual interviews	Will be held after the implementation period. The focus of the questions will be to reflect on, and discuss with the researcher, the digital application after having had time to trial and use them over a three month period. *(from HRE proposal)*	Interviews were held three months after the implementation period with four participants and one teacher who had recently returned to UNTL from study in Australia, and had observed students working with FLAX. This was carried out by a colleague from Waikato. He also observed students using FLAX.

	Original Schedule	Actual site schedule
Focus group	Exit discussion held among the participants. These sessions will be recorded on an audio recorder. The purpose of this final session is for the participants to share their experiences and new understandings. *(from HRE proposal)*	Both entry and exit discussions were held in Week 2 and Week 6. These were recorded on audio and the final exit group recorded on video
Written reflective journal(researcher).	Thoughts about the aims of the project written in journal form six months prior to visit.	Daily journal kept on site visit to record events as an organiser, as well as to record feelings and impressions at the time.
Workshops to familiarise participants with FLAX		Although these were not scheduled in HRE they seemed to be a useful way to proceed once at the site. Three two- hour workshops held in Weeks two, three and four were held to support participants so that they understood the capacity of the application. Participants were asked to discuss their impressions after the workshops.

Table 3.3.
Weekly schedule of visit to site which includes the unanticipated changes

2009	Procedure	Oral Reflective Journals Equipment	Focus Groups Equipment	Written Reflective Journal
3-6 June prior to visit	FLAX introduced by colleague from Waikato to teachers at UNTL at conference workshop		Group meeting at Waikato. FLAX introduced to participants. Video rec.	Preliminary thoughts and aims prior to visit.
Week 1 Arrive 3 September	Install FLAX on computers with some difficulty. Written informed consent letters distributed and collected.		Focus Group (1a) Four participants Focus Group(1b) Four participants	Researcher's daily journal entry
Week 2	Workshop 1 "Re-introduce FLAX"	1st Collection. Audio tape recorder, Pairs record in own time.(3 pairs and 1 interview collected). New tape issued.		Researcher's daily journal entry
Week 3	Workshop 2 "Demonstration creating FLAX tasks" Researcher listens to ORJ's 1	2nd Collection (Three pairs, one of which is in Tetum and two interviews collected). New tape issued.		Researcher's daily journal entry
Week 4	Workshop 3 "Review FLAX process." Researcher listens to ORJ's 2.			Researcher's daily journal entry
Week 5		3rd Collection (Three pairs, one inTetum).		Reflections on viability
Week 6 Leave Site 10 October	Leave printed copies of FLAX for teachers' use		Focus Group Four participants Audio/video	Researcher's daily journal entry
	Researcher listens to ORJ's 3			
3 months later in Week 24		4th Collection Individual interviews by my colleague. (3 participants from study and 1 new)	Two observations /interviews by colleague of students working with FLAX .Video	

3.4   Transcription and data analysis

The framework described in Burns (1999) informed the analysis of data.

> Analysis involves us in making some kind of sense of the data by
> identifying broad trends, characteristics or features across an event or a
> series of events. We can then begin to draw out theories and explanations
> and attempt to interpret the meaning of these trends or features (Burns,
> 1999, p. 155).

Burns (1999) lists some techniques for data analysis such as identifying patterns or categories that are repeated across the data and making connections between these categories. After the data have been assembled, Burns suggests that they should be scanned initially as broad categories may suggest themselves. The data can then be coded or categorised to identify patterns more specifically and to reduce the data to more manageable concepts, themes or types. The data should then be compared and contrasted to ascertain whether there are themes developing or emerging across different data collection techniques. Maps and tables may be useful to describe and display the data.

3.4.1   Approaches to analysis

The recordings were transcribed using Windows Media Audio File. The audibility of the tapes was satisfactory so complete verbatim transcriptions were made of all oral reflective journals and focus groups which included the video recordings. The services of an undergraduate scholarship student from Timor Leste studying at UoW were used to translate those journal entries spoken in Tetum into English. There was a two-fold approach used to analyse data: microgenetic and ontogenetic. Vygotsky used both of these approaches in his work with children although there is very limited literature available about his methods.

3.4.2   Microgenetic approach

Wertsch (1985) says that although Vygotsky did not go into great detail in his writings about microgenesis, essentially it means the step by step, moment by moment "unfolding of an individual perceptual or conceptual act" (p.54). Microgenesis looks at transformations involved in the movement from thought to speech utterance.

Wertsch (1985) says,

Vygotsky argued for the need to include this type of microgenetic analysis in psychological investigation …pointing out that by ignoring this form of genetic transition, learning and experimental students often fail to utilize what may be the most interesting data they generate.(p.55)

A tenet of this method is that human mental processes must be studied by using a genetic analysis that examines the origins of these processes and the transitions that lead up to their later form. Another of Vygotsky's tenets in regard to microgenesis is that genetic progression and transitions are defined in terms of meditational means (tools and signs) (Wertsch, 1985, p. 56).

3.4.3 Ontogenetic approach

The other form of analysis is Vygotsky's concept of ontogenesis which involves "the simultaneous, interrelated operation of more than one force of development" (Wertsch 1985, p. 41). Development is viewed in terms of the relationship between natural and cultural or social forces forming a "qualitatively unique explanatory framework". An ontogenetic approach in this study views the development of teachers' perceptions and ideas over time, in this case study, a period of five months from when the innovation was introduced to a point where there had been a period of implementation.

3.4.4 Analysis process

Following the transcription, the analysis started with the reading and re-reading of the transcript data. As there was a large quantity of data, I experimented with electronic software *NVivo* (Bazeley, 2009), which would assist me to categorise the material. However, I decided to work manually with the data on Microsoft Word and Excel which provide colour coding as part of their tools. My inexperience with *NVivo* was the key factor in this decision and I considered that working manually with the data in some way brought me closer to the work. Table 3.4 shows the data analysis steps and the methods used.

Table3.4

Summary of data analysis process

Step	Preliminary analysis	Analysis steps	Outcomes
Analysis: oral reflective journals	Preliminary review of data. (microgenetic) according to focus questions.	Read and re-read data. Identify frequently used key words and concepts related to the four broad themes. New categories emerge. Interrogate the data to develop subcategories from data arising from above. Compare and contrast categories and subcategories from focus groups.(ontogenetic)	Synthesis of data according to the four themes and new sets.
Analysis: focus groups	Preliminary review of data according to focus questions. (microgenetic)	Read and re-read data. Identify frequently used key words and concepts related to the four broad themes. New categories emerge. Interrogate data to develop subcategories from data arising from above. Compare and contrast categories with oral reflective journals. (ontogenetic analysis)	Synthesis of data.
Analysis: researcher's reflective journal	Store data Electronically. Read to refresh memory of the timeframe and to relive the experience	Read and re-read data. Sort key words and key concepts into two themes. Narrative (what, when, who) and reflective thoughts and feelings.	Synthesis of my experience. Create temporal parallel journals of synthesised data(Oral Reflective Journals / Focus Groups and Researchers Journal).
Triangulate findings	Review all data previously identified.	Compare and contrast data from three sources; oral reflective journals, focus groups and researcher's journal. Interrogate data for additional or contradictory findings. Further refining of content of all categories.	

At the preliminary stage of the analysis, the themes were based on the questions that guided the data collection in both the oral reflective journals and the focus groups. The data from these four identified broad themes were colour coded. The broad themes were A. Knowledge about FLAX; B. Positive thoughts about FLAX; C. Concerns about FLAX; D. Thoughts about the future. These themes were interrogated with a microgenetic approach analysing the thoughts and ideas occurring in the initial collections. Data from both the initial oral reflective journals and two initial focus groups (a and b) were analysed.

In the second stage of analysis the material was compared and contrasted, again using frequency and the sequence of collections as organising principles. Frequencies of comments, and which collection they were from, were coded by cutting and pasting. These were grouped and colour coded. New categories then started to emerge arising from the four main themes.

I then coded these new sets of grounded categories. The theme of Knowledge about FLAX developed into two further categories A+1 Generic statements about the programme, and A+2 FLAX helpful for teachers' knowledge. The B theme, which initially started as Positive comments about the FLAX, emerged as two main categories B1 Useful for teachers and B2 Teachers' perceptions of its usefulness for students. The C theme of constraints also emerged into two sub-categories: C1a Concerns about their own ability with technology and language and C1b Concern about power supply and access issues. A second category emerged which was a part solution to C1a which was to request further training in the application. The fourth theme, D was Thoughts about the future. It developed into further subcategories some of which developed further and some of which did not. These categories were mainly analysed from a microgenetic approach as I searched for trends and themes to emerge as I interrogated the data. These initial data were also the starting point for the ontogenetic analysis of data.

In the second phase, I continued the process of interrogating data and in this phase further themes developed from the subcategories. In all the four themes there was further ontogenetic development. Theme A1 developed into four specific expressions or developments A1a, b, c and d. Theme B1 emerged with new categories as did B2. Theme C remained consistent throughout, but C1 had no further data to support it. C2 developed a new category which had links to D which also continue. D also developed some sub-categories.

The ontogenetic analysis was a powerful tool throughout the second phase as this form of analysis matched the sequencing of the collections and each collection revealed more development. A microgenetic approach was useful throughout to follow any new thoughts and perceptions that arose.

In the third phase of analysis, I examined my research journal to find references to these grounded categories and to compare and contrast the data. I drew up a parallel frame based on when material was collected, and laid the data side by side according to the week concerned and compared and contrasted the data.

In the fourth phase, I synthesised all the data from the oral reflective journals, the focus groups and my reflective journal. The next stage was to compare the categories in my journal with the teachers' journals and compare the data in a chronological and temporal manner. The final outcomes of the data analysis are data which form the basis for the findings and discussion sections and eventually the recommendations.

3.5 Summary

This chapter has provided an outline of the principles and procedures for data collection and a rationale for the choices made when selecting methods and approaches, in particular paying attention to the reasons for using oral reflective journals as a main source of data.

The means of analysis, microgenetic and ontogenetic, have their origins in Vygotskian thought. They examine the data from a moment by moment perspective (microgenetic) and also from an ontogenetic approach (analysing the cognitive, social and affective perspectives together over a period of time). I am satisfied that these two approaches assisted in the analysis of the data collected through three means: oral reflective journals focus groups and my own reflective journal. Results of the data will be presented in Chapter Four.

Chapter Four Findings

4   Introduction

Three sets of data were collected at the site over an initial period of six weeks during my visit to UNTL in September - October 2009. A later collection was undertaken on my behalf by another researcher after a three-month period of implementation.

The presentation of findings will show how participants moved in their thinking and perceptions about the FLAX application over this period of time. The presentation will show that the teachers moved from a position of interest and excitement about FLAX which was tempered by some concerns, to a position of confidence about the programme and readiness to use it. In the fourth collection, taken after a period of implementation, teachers thought that FLAX was of benefit to students as a language learning tool and commented how the students benefitted from learning together. There was a perception that by adopting 'modern' Computer Assisted Language Learning methods that they were demonstrating development as a university. They acknowledged that there were still technical difficulties, both in terms of electricity supply and the maintenance of computers that might be a constraint for some time. As reported in Chapter Three, data were gathered from three pairs of tutors in a series of discussions captured on an audio recorder. The participants were given four questions to discuss while they reflected on their experiences and thoughts about the application. Data were also gathered from two focus groups by means of audio and video recordings. Over the course of the data collection, there were three individual interviews of participants who were not able to meet in a pair. These interviews are identified by a (i). Some oral reflective journals which were collected in the national language Tetum have been translated into English and are identified by (T). The remainder of the discussions are in English and the language is not specified. There were also two focus group collections in the first week. All but one of the ten participants was involved in the focus groups, and the researcher was also present. The questions used were the same for both the discussions and the focus groups.

The presented data are followed by brackets which acknowledge the source of the data. The first number identifies from which collection the reflection is made, and the second number is a coded number for which of the ten participants made the comment. The focus groups are identified by FG, the collection is specified as 'a' for the first one, and 'b' for the second, and the relevant speaker is identified with a number from one to ten. Participants have the same identifying number in the oral reflective journals as in the focus groups.

Samples of Oral Reflective journals and Focus groups can be found in Appendix M, Appendix N, Appendix O, Appendix P and Appendix Q. The highlighted areas are colour coded sections used to analysis the data in the early stages of data analysis.

4.1 First data collection: Teachers' interest tempered with concerns

By the time the participants recorded their first oral reflective journal they had attended one workshop session with the researcher where the FLAX application was re-introduced. The participants were excited about the potential of FLAX but they raised a number of perceived difficulties. Almost all of the participants had some concerns about their capacity to realise the potential of the FLAX programme. Four participants stated that innovations were generally difficult for them, and four felt that that their own English language capacity was not sufficient to engage with the innovation.

Participants felt that there was not enough CALL capacity in the department. The common thread throughout the discussions was that further training in the application was essential to address the difficulties they were expressing. The potential benefit of the application was recognised by the participants. They felt excited about the application as it was a new technology and they thought that it could be a useful teaching tool.

This is good as a source for us to learn or to be familiar with the Flax (1:1).

> This will be a proper teaching aid for teachers for the teaching and learning process (1:9).

> I found new ways how to improve vocab and new ways how to teach vocab. This is a good way for me to teach my students in the future (1:4)

> It will be easy because the readings are already inside the programme, and then we just click on the word guessing or fill in the blanks and it will come out automatically (1:3)

While most of the journal entries focused on the potential advantages to the teachers, there was also comment about its relevance to the learners: This point was taken up in the first focus group session

> ….to make the students alive, not only do the students bored but make the students alive, make the students feel doing everything by themselves (FG1a:5)

> I'm very happy to follow this programme. I'd like to say that as a learner also let the students to learn free, also we have a good method by themselves, happy because if they learn they try to find the vocabulary, to complete so many things they can learn (FG1a:5)

> And also this programme will help the students' individual and practical learning and this to advance the students language learning and computer learning at the same time (FG1a:3)

In the focus groups, the teachers also recognised that development in Computer Assisted Language Learning would have a place in education in the future, and they wanted their university to be a part of that development.

> And also if we see the era of globalisation we don't want to stay behind This is also a part of technology because if you have the equipment, then you yourself don't equip yourself to operate, then it means a nonsense(FG1a:7)

Like compared to other developed countries, industrial countries like Japan, and other countries in the world… We hope that later on this programme will spread to other departments at the university so and then we'll pass on to senior high schools in the future (FG1a:3)

In the future we will have technology we prepare the students for the future. All the computers to prepare ourselves to face the future. In the future there will be all the learning equipment will be on computers and we prepare ourselves. And also we prepare ourselves to face the future (FG1b:6)

Yes, this programme will be really helpful because I can say it's kind of portable. Once you install it on the computer you can use it forever, you can update it many times if you want to change the new material (FG1a:7)

However, this early interest was tempered with a range of concerns. The participants were concerned that technical problems such as the shortage of computers and erratic electricity supply might prevent development of the application. They were also apprehensive about the state of their own technical and linguistic skills. However after expressing these concerns they identified further training as a solution at least to the problems relating to their own capacity.

It is difficult for us to facilitate it to our students, as we do not have enough computers in English Department (1:T8)

..in like East Timor we don't have many computers for students (1: 4)

We don't use computer, so that's one difficulty for us for teaching the students. No computer, no web, no internet etc so that's one difficulty (FG1:4)

However we have some problems, electricity, and limitation of computers. A lot of students in the English department students, there are nine hundred and one, but only two computers in the computer room. How can we access all? (FG1:3)

As noted above, these considerations were also compounded by the teachers' (initial) lack of confidence about both the use of the new technology and their English language competence.

> I think the difficulty is FLAX is a new programme for us. Precisely, if something new, we always face the difficulty. (1:5T)

> ...if we want to use this first of all we have to learn first because there are some difficulties. It is… for us it is difficult. (1: 2)

> It's a bit scary thing. Ummm ...It is very useful for both students and teachers. Yeah for the teaching and learning process. But I think the important thing is that we should learn first before teaching.(FG1b:9)

> … the difficulties… we are not ready for it. (1:2)

> We still poor of vocabulary…grammar ...er, have to learn more grammar. (1:1)

> ..If we want to use this first of all we have to learn first because there are some difficulties. If is for us it is difficult .The vocabulary are still unfamiliar for us we have to learn. (1:1)

After expressing such concerns, a number of particpants suggested a solution. They thought that further training in FLAX may raise their confidence levels.

> The difficulties… we are not ready for it yet. This Flax maybe we need to get more training.. get more explanations .. And also some instructions… try to learn more from instructions. (1:2)

> If we want to know more about this technology we need some guidelines, some instructions. We need more from Mrs J to teach us more about FLAX. To use detail how to use it perfectly. We need more guidelines about FLAX keep in touch with J F about this.(1:2)

> I need to learn more, I need to practise more how to use this. I'm interested to my students and also how to operate and what are the exercises in the FLAX. (1:6i)

Yeah, how to operate the FLAX, so next week I would like to ask Mrs Jen in order to review how to install Flax and also hopefully I will start from the start to learn how to use the FLAX. (1: 9)

4.1.1 Researcher's journal

The researcher kept a daily journal during the six week visit. This had a dual purpose: to write down ideas and thoughts as they occurred and to record daily events, and also to keep a record of feelings about the process. The reflections in the journal can be placed alongside the oral reflections of the participants. Sometimes there was convergence in the parallel reflections and at one stage there was some divergence.

In Weeks One and Two the installation of FLAX completed with some difficulties and the particpants expressed interest in FLAX.

5th Sept: Having a nightmare installing the FLAX CD's. They do not seem to be installing well. Was able to install on two computers in the teachers' office and one in the Resource Room. Will use my laptop for workshops.

10th Sept: The big day when I gave the first workshop and the instruments for collecting data I prepared a sheet for the workshop and got in early. Things went pretty well. I worked with 4, 7, 5 and 3 until just after 10.00am and then I did the 1st focus groups interview. I will repeat this process tomorrow with whoever turns up.

In the focus group their comments were very positive and the negatives were pretty much what I expected. One surprising thing was that they didn't buy the idea of FLAX in Portuguese!! Interesting.

One thing I noticed today as the teachers were working on FLAX was their understanding of meaning from text is somewhat limited. They seemed to read without really grasping or thinking about the meaning as they go along. This will be a big benefit then of the tasks and texts which require them to think about meaning.

11th Sept: Am thinking that I may need to do more data collection at a later date after the teachers have had more experience with it.

4.1.2 Summary of first collection

The participants were positive about the programme and also the possibilities of using FLAX as a learning tool. However, there seemed to be a perception by the teachers that new tasks and innovations were difficult for them. Some felt that they were not ready for FLAX because of their own shortcomings in the English language, and they mentioned their own shortcomings in vocabulary and grammar use.

The main constraint they perceived was that the department lacked capacity in Information Technology. Almost all participants mentioned that there were constraints around the technical capability at the university. They also mentioned the electricity supply which was unstable and had been so for some time.

There was a high degree of convergence between pairs and focus groups in their perceptions but a higher degree of co-construction in the focus group data collection where they built on others' ideas a little more than in the paired discussions. In the focus groups, there seemed to be less evidence of the strong turn-taking culture which was evident in the paired discussion. The other difference in the focus groups was the presence of the researcher who introduced the questions and introduced a number of probe questions during this time.

> While the teachers explore this source it means it will also be benefit for the students. The teachers will use various kinds of sources. (1:1)
>
> It's better for the teachers to be familiar with it first. (1:2)
>
> It's better for the teachers to master this and then later on introduce to the students. (1:3)

My researcher's journal described the initial difficulties with installing FLAX. I recorded that I was pleased with the particpants' willingness to engage in the research.

4.2 Second data collection: Gains in confidence

The first data collection had shown that the participants had expressed the need for further training in the application. By the second collection, the whole range of products in the application had been demonstrated. The second workshop built on what had been learned from the first, demonstrating how the teachers could create their own tasks for their students. The workshops consisted of some input from the researcher and then the participants were given some tasks to do to consolidate their learning.

The second set of data indicated that the participants were gaining confidence in using the application and could see the value it might bring to the teaching and learning processes at UNTL. By the time of this collection they had attended two workshops. They had spent time using the application and, through repeating the activities, were gaining in confidence. They appreciated the support they received during this time with any difficulties they experienced. There were no comments in the second collection about their own lack of capacity in terms of their ability with the English language. They were still conscious that the department did not have the infrastructure to support the full utilisation of the application.

The participants revealed increased confidence with the application.

> It is interesting for teachers and students to be familiar with the Flax and to create their own exercise and then to do exercise. (2:1)

> Programme is good for the TEFL students, of course, and if the reading they can read it.(2:8i)

> I could use it for the TEFL students. (2:8i)

> It's easy because the way of using it is easy, it's clear. (2:8i)

> …but when you introduce this FLAX for me and I think, oohhh, this is the way how to do it. Now I understand how to do it. (2:6i)

They realised that practice and repetition with FLAX, and the support they had received, had assisted them to gain more confidence.

> We try to focus to concentrate to it because it we focus and concentrate on it, it means that we can explore many sources and many useful language that we can take from this technology. (2:1)

> For the first time everything was difficult for me, but I tried to do again and again for example how to fill the empty spaces for the new vocabularies. (2:4)

> I'm going to repeat the exercises that I have done, so I try to repeat everything that we have done. It doesn't mean that I have known everything as I didn't master yet the materials yet. So I try to repeat or reopen the exercises about Fill in the Blanks and then I try to revise everything that I have learned. (2:4)

> When we use it or we use like usually on the computer we have to use it every time like one or two weeks, we how to use it and then how to do the exercise only. If we didn't we will forget and therefore it's difficult so we have to use it. (2:6i)

They expressed ideas they had about FLAX's pedagogical value, and how they could use it as a learning tool in their teaching programmes.

> They will get experience and then they will be creative to make writing or new vocabulary or other components of linguistics. (2:10i)

> The teachers could create their own stories or short writings so that they can, beside of providing these activities to the students the teachers also know how to create activities, their own stories rather than having activities from the books, they can create their own stories in relation to the real life of East Timor. (2:10i)

> This programme FLAX will help students when they use these activities and then adjust to involve in doing the activities in this programme. In my opinion they will get experience and then they will be creative to make writing or new vocabulary or other components of linguistics. (2:10i)

They imagined how they and other teachers could use the FLAX application in the future.

> Yes, my comments are FLAX programme is a good programme, perhaps it can be extended to other people who want to know English, not only for us. I think not only in university but also in secondary school and intermediate school. So, they can attend this programme because this programme can quickly help us learn English. (T2:5)

> To me, the part I more interested in this programme is about technology. This programme is very good. It is about time because there is more flexibility and effectiveness. We do not work manually but automatically because there is already the design and the format. We can only change it if we need to add new things. (T2:7)

> If we install and apply it in English Department, it will be better for us. Furthermore, we can also promote it to the other department or faculty, because we are from English department got it first, especially education department. (T2:7)

However, while they were more confident about the application and how it could be applied, technological constraints still remained a concern.

> But the other problem is that if we have enough equipment and computers then we can ask students to do their writing, to create their own writing stories. (2:10i)

> The problem with the university we have trouble with the resources, couldn't have computers in the class. (2:8i)

> When we talk about technology, we are innocents in technology itself because it is new. (T2:7)

4.2.1 Researcher's journal

14 Sept: Today was one of my best days so far although it didn't seem spectacular at any given moment. I think the most satisfying thing was that the data collections are getting done and teachers seem keen to come to workshops.

17 Sept: F5, N4 and S8 present with me this morning for the workshop which went quite well. They seemed to get the hang of how to make their own exercises.

18 Sept: Had a good afternoon with F2, F1 and N4. Taught them how to make their own exercises. F2 said he would go and try out himself on his computer. N4 is having difficulty with his old computer so will find it difficult to practise. F1 is going to bring her laptop in on Monday and we will try to install the programme on that.

19 Sept: The best part of the day was some nice data collected from J6 who came in and wanted to know how to make more texts. I captured it on tape.

29 Sept: Had a fairly good workshop with participants today. F5, S8, J3, F1, N4 and F3 all came in. I prepared a worksheet for them on how to make their own Word Guessing exercise. They can now all use FLAX; open, create new exercises and save them. They had lots of practice and it was very good to see them using it so confidently. I feel firmly that I need to get more data after the next semester. Feeling more positive this week about everything.

There was congruence between the teachers' reflections and my reflections at this stage. The participants were satisfied that they could use FLAX to open, create new exercises and save them.

I was happy that with further training the teachers seemed more confident about the application, and were asking questions about making their own texts.

The second collection of oral reflective journal entries was collected in Week Four, by which time participants had attended two workshops and had been taught how to make activities to use with their students. Gains in confidence were noticeable after this collection. The participants were feeling more confident about the application and credited that to having had time to practise and repeat the tasks. One respondent remarked that they had time constraints that might prevent them from spending time with the application. They appreciated that the application was quite easy to use. It was noted that there were no further requests for training. Although they exhibited more confidence they still expressed concerns about the lack of computers and Information Technology facilities in the university.

My journal showed that I was pleased with the teachers' response to the workshops and that they were engaging with the data collection processes.

4.3   Third Data Collection: Readiness

The third data collection was taken in Week Six. A further workshop had been completed where participants used the application. Most of the participants expressed readiness to use FLAX with their students. The only barrier identified was the concern over the infrastructural difficulties around Information Technology. There was confidence expressed that it was only time before these would be surmounted.

> Perhaps now we are ready to use the FLAX to access material sources to the FLAX in order to teach our students. Perhaps now we are ready to explore the FLAX. (3:2)

> We are ready because we have learned how to use the FLAX. We are ready to use this for the students. (3:1)

> I feel I am ready to use it with my students. It's very relevant for the students. (3:4)

> I'm ready to use FLAX with my students so these four types of exercise I have use all and practices then so I will be able to help my students, to be honest I am ready. (3:4)

Most teachers expressed opinions that the application was functional and easy to use.

> It is easy for students and it is interesting because there are many things provided by Flax for example like the key answers, the key answers and it is important too because we can explore many things, many words many new vocabularies, unfamiliar words from it. (3:2)

> Actually nothing was difficult with the FLAX. The FLAX can be said it is easy for us if we want to practice it frequently it might be easy for us. (3:2)

> Flax is great technology. It is helpful. (3:2)

> Technology for us to access. Yeah, it will be useful. (3:1)

This programme will help the students to learn with fun. (T3:5)

They were able to perceive the pedagogical value of FLAX and imagine how they would use it with their students.

People, they like to play game and they want to sit on the computer and they want to play a game. But in fact it's the material it's like a lesson but it's like a game. Two to three sitting together but in fact that's the material they are learning. (FG6:3)

For me, it's useful for writing and, yeah, useful for writing and then learning grammar and vocabulary too. Because that's why the students do not know about the new words. They have to learn words by words and then how to fulfil their empty spaces etc. (FG6:4)

So, if we get used to, we have learned a lot of vocabulary and easy to do the exercise. (3:1)

One or two teachers thought that it might make lesson preparation easier:

Me I think the reading is already in the computer, and it's well organised, so no need to need to waste the time. Once we want a printout it's depends on the level. Because it's already well organised. I just click level one and level two, three, three and four, four. It's been very well organised ... the organisation is helping you because it been pre organised. I don't need to waste my time if I just close my eyes. (FG6:3)

Four participants envisaged creating their own digital libraries which would be suitable for the Timor-Leste context.

I think what they explained is maybe we need to create our own stories and then make the exercises. (3:1)

Yeah, yeah, I do hope that if it is possible we can create our own stories inside especially the real things that related to our environment or our country, this will be great. (3:2)

We can guide the students to make their own stories. (3:1)

The only barrier discussed was the concern over the infrastructural difficulties around Information Technology, although participants expressed confidence that these would be surmounted in the future.

> I think the difficulty is FLAX is a new programme for us. Precisely, if something new, we always face the difficulty. However, for the period of participation in this programme, we realize that this programme is not very difficult; it will be no trouble for us. (T3:5)

> Another thing, we know that if we use FLAX, we also have to use technology, for example computer. It is difficult for us to facilitate it to our student as we do not have enough computers in English Department. I thought it is a slight difficulty for us to implement this programme, especially for the student. We need computers to implement this programme. Computers help us to implement this method. So, its slight difficulty but I suppose that university can help us. (T3:5)

4.3.1 Researcher's Journal
The researcher's journal showed some divergence from the participants' diaries at this point.

At the end of Week 5, the researcher recorded her own thoughts and perspectives on how the implementation of FLAX was proceeding. This was just prior to the third data collection and the last focus group. The researcher, although pleased that the process of gathering teachers' impressions had been smooth, wondered whether the implementation would continue after her departure. However, the participants generally seemed to be more sanguine about the continuation. See Table 4.1

> The teachers have been good after committing to FLAX and saying they would like to be a part of it. They have followed through with their commitment to attend the workshops and to record their thoughts and impressions every two weeks.

> The Reading Room is open and seems to be staffed by students who come in to the campus each day. It is well frequented, being about the only place in the university with Internet access at the moment.

There are plans for a bigger and better room which will be funded by US AID. They are going to put the security fencing in first and then the room will be able to take shape. It will be made into both a resource room / self access centre.

The university year has been interrupted as all teachers are shortly attending Portuguese language learning sessions for three month. All the students are on holiday and will be until next January. There is a sense of inertia at the uni but this is hardly surprising as there are few students.

The teachers often seem to be too busy to do what seems important for their development. There is not a sense of urgency about professional development.

FLAX has gone reasonably well but I am worried that it will be put away in the same way that the curriculum was. How can this be avoided?

4.3.2 Summary of third collection

In the third collection the findings showed some divergence between the participants and the researcher. The participants agreed that they were ready to use the application. They used the word 'ready' frequently. They thought that the application was easy for them to use, and that it would be easy for the students as well as fun. They had many ideas of how they might use the application in their lessons. They were also interested in developing the programme by creating their own digital libraries and utilising the programme for learning.

The interesting finding is perhaps in what they did not say in this collection in relation to the other two collections. No participants referred to their own lack of capacity in the English language or in teaching it. They could see the value of the programme to the curriculum and had views about how the application could be used in the future.

None of the participants expressed the need for further training in the application. A number referred to the department's lack of Information Technology capacity, but there was hope that the university would assist them to overcome this barrier. It seemed that the teachers were willing to look beyond the immediate and envisage a

time when there would be more Information Technology capacity in the Department and meantime they intended to implement the programme within the existing constraints.

On returning from the site, the researcher listened to and transcribed the three collections. She realised that the teachers' perceptions about the application were indeed sound and realistic, and that they understood the value of the application at a deep rather than a surface level. They understood the pedagogical benefits it would bring and how they could utilise FLAX within the curriculum.

She realised that they also understood that FLAX and other CALL programmes represented a future mode of learning at the university and that they were able to overlook present technological constraints in the knowledge that they would eventually be overcome.

Just prior to my departure some of my reflections showed that I was a little stressed. I recorded that I was concerned about whether the application would be utilised after my departure. After I arrived in New Zealand I listened to the audio recordings of the third collection and realised that I had perhaps underestimated the teachers' understanding of the application. Their responses showed that they were ready to implement FLAX and that they understood its pedagogical implications.

4.4 Fourth data collection: Reflections after a period of implementation of three months

During this time the FLAX application was available to students to use on some laptops in the Resource Room. Teachers also had access to FLAX on some of the PC's in their offices. There was no use of the application in classrooms as there are no computers in classrooms. The reflections from the teachers after three months of implementation were very positive towards the application and its value in the curriculum.

Participants could see that FLAX was easy to use and that students were motivated to use it, and that it was a useful language learning tool. They also commented that

students enjoyed working on it together. However, there were still concerns about having limited numbers of computers at the university.

There was agreement by all participants that this application was functional and easy to use and that it was easy for students to teach each other the application.

> At the beginning it was hard but after they used to it is it is easy. (4:3)

> The first time the teacher taught them and after that they can teach each other. (4:3)

> It's only the first time it is difficult but after they get used to it, the young people they learn things very fast. (4:3)

In their discussions, teachers talked less about the programme being easy to use and more about the pedagogical value of FLAX and the ways that it was being incorporated into their teaching. They discussed ways that it could be used to improve students' reading, writing and vocabulary and be built into the curriculum. They also had observed that it was useful in strengthening concentration.

The pedagogical value of the programme was again affirmed.

> That the different programmes help the students to cooperate. (4:11)

> The students to increase their ability in language, let's say function and form, improving their vocabularies. (4:11)

> It seems that they are interested because it is a new technology for them. To learn English like this. (4:1)

Flax helps students to develop metacognitive skills:

> It also helps them to concentrate. (4:3)

> They really concentrate on the tasks… Normally, not like Western society… Here they always concentrate. (4:3)

> It doesn't only just help them to increase their vocabulary; it also helps them to concentrate. (4:11)

FLAX can be integrated into the curriculum:

> I think reading they have to read the text, and scrambled sentences will be good for structure lessons. (4:1)

Word guessing can be good for vocabulary. (4:1)

So, in both cases, vocabulary like word guessing, the students they will find the right word to put in improve their writing as well. (4:1)

If the teacher used to teach grammar in the class then they can use it. (4:1)

If the text is familiar to the students they can understand it more easily, but if the text is not familiar, well it's quite hard. (4:11)

One aspect that was mentioned by all participants was how students learn from each other on the application. They mentioned students 'cooperating together', 'teaching each other' and 'explaining to each other'. They observed that even though FLAX is 'like a game but it's also learning.'

Students learn together: Peer scaffolding

While they are doing the tasks they are talking, explaining to each other. (4:3)

The other one was more familiar he just showed the students can teach the other how to use the tasks. Because the other one was showing the new one. (4:1)

He just showed how to do it. Not all learned it. If the students are good at computer they can learn well. Students can teach each other I think. (4:1)

If the students are good at computer they can help the other. (4:1)

They come in their relax time. Then they sit on the computer and they may play a game. It's like a game but it's also learning. (4:3)

First we can ask the students to do as a homework. (4:11)

Second we can discuss more in the classroom in groups around a laptop, about 2 or 3 persons. (4:11)

It can also help the students to get into a habit of learning. (4:11)

The interesting thing about this programme is that the different programmes help the students to cooperate. (4:11)

More positive comments about the application in terms of building further collections were made by four participants, one of whom amplified the statement by saying that 'stories about Timor society and culture' would be valuable. Three or four

participants also mentioned the positive effect that they thought a programme like FLAX might have on the students' perceptions of the university.

> We can extend your collection. Build a bigger collection. (4:1)

> Slowly make academic texts. (4:1)

> Maybe like students can write about their experiences of stories of Timor society and culture. (4:1)

Students' perceptions of the university

> Affect the students' perceptions, they will think that our teaching and learning now is increasing, it has more priority not like before. (4:11)

> First, because FLAX is the new thing. It is a new thing in our university. It is a great contribution for our department especially in the teaching and learning process. (4:11)

The constraint that was consistent throughout the four collections was mentioned here again, that of technological difficulties both in the physical resource and the electricity supply. Four participants seemed to think that this problem would be addressed by the authorities in the near future.

> Electricity, it's a big problem at the moment because we have to use the Laptop. It needs electricity and it's a little bit hard for us. (4:11)

> The supply problem will be fixed soon hoping it will be fixed soon. (4:11)

> We just get independence as we are still working on all of the things. We still lack all of the things. We don't have Internet in the department. (4:3)

> The main problem is we don't have power. The power is off in the afternoon. (4:1)

4.4.1 Researcher's Journal
The researcher was unable to return to the site at the time of the fourth collection so there was no researcher's journal attached to this collection. A member of the U of W team was visiting the site in February of the following year and was able to interview some of the participants about their reflections on the programme after observing the

students interacting with the programme. The visiting lecturer was also able to observe students interacting with the FLAX programme.

4.4.2 Summary of fourth collection

In the fourth collection there was a convergence of positive opinion about the value of the programme, although the comments about technical difficulties still remained. A number of participants reflected that it was easy to use; both for teachers to prepare and for students to use. They indicated that the students were motivated to use it and suggested that one of the reasons for this was that they perceived it to be modern technology.

They appreciated that FLAX was a language learning tool and could envisage where it supported the curriculum. They had observed that students enjoyed working together on the application and thought that students working together was a good idea. They also observed that the students enjoyed working on FLAX, that they had fun but that they were still learning. There was interest in being able to build and create their own collections within the Department. There were also suggestions that the students' perceptions of the teaching and learning environment at UNTL may now be improving and that perhaps FLAX had a part in that. The technological difficulties mainly focused on the power supply which was erratic.

The fourth collection showed a consolidation of findings from the first three collections. The fact that the researcher was not present in the fourth collection may have strengthened the face validity of the findings as the possible effect of the researcher's presence was eliminated in the fourth collection. Participants seemed confident that they could use the application for the benefit of their students. They can see that it would be a key for learning in the future

Although there was a common theme of technical difficulties, the participants also looked forward to a time in the future when these would be addressed and so perhaps saw them as a temporary constraint. They also felt that they were keeping their university up with developments in other South East Asian universities and this seemed to be a source of pride.

Shortly after my return to New Zealand I read and reread the collection of journals. I put them side by side and found that at the end of the third collection the participants were ready to implement FLAX with their students. However even though I was pleased with how the introduction had proceeded I had a number of anxieties about its future implementation. The reflections from both the participants and the researcher are summarised below in Tables 4.1, 4.2, 4.3, 4.4 and 4.5.

Table 4.1

Summary of findings from parallel journals: Prior to Visit

Participants	Researcher
We are lacking resources (Theme of feedback from students and some teachers in 2005 and 2006)	I would like to do some research which contributes to the knowledge about the teaching and learning processes at UNTL

Table 4.2

Summary of findings from parallel journals: First Collection Week 2

Participants	Researcher
Re introduction of FLAX. Interest with apprehension This will be a proper teaching aide for teachers for the teaching and learning process (1:9) This is good as a source for us to learn or to be familiar with the FLAX (1:1) I think the difficulty is flax is a new programme for us. Precisely, if something new, we always face the difficulty. (1:5T) … the difficulties… we are not ready for it. (1:2)	**Installation of FLAX and initial workshops** Given a warm welcome. Technical difficulties with installation. Prepared initial workshop and collected permissions. Had 2 Focus group interviews with participants. Gave second workshop to teachers about how to make their own exercises. Teachers seem willing to try FLAX in their own time and asking about making more texts.

Table 4.3

Summary of findings from parallel journals: Second Collection Week 3

Participants	Researcher
Gains in confidence It is interesting for teachers and students to be familiar with the Flax and to create their own exercise and then to do exercise. (2:1) The teachers could create their own stories or short writings so that they can, beside providing these activities to the students the teachers also know how to create activities, their own stories rather than having activities from the books (2:10) When we talk about technology, we are innocents in technology itself because it is new. (2:7T)	**Increased confidence after workshops.** They can now all use FLAX open, create new exercises and save them. They had lots of practice and so it was very good to see them using it so confidently Teachers seem willing to try FLAX in their own time and asking about making more texts. First sign of ownership. Teachers more confident about using FLAX still concerned about their own capacity and with technical constraints.

Table 4.4

Summary of findings from parallel journals: Third Collection Week 5

Participants	Researcher
Readiness to use FLAX Yes perhaps now we are ready to use the FLAX to access material sources to the FLAX in order to teach our students. Perhaps now we are ready to explore the FLAX. (3:2) We are ready because we have learned how to use the FLAX. We are ready to use this for the students (3:8T) I feel I am ready to use it with my students. It's very relevant for the students. (3:3) I'm ready to use FLAX with my students so these four types of exercise I have used all and practices then so I will be able to help my students to be honest I am ready. (3:3)	**Research visit went well but some anxiety about the future** The teachers have been good after committing to FLAX and saying they would like to be a part of it. They have followed through with their commitment. FLAX has gone reasonably well but I am worried that it will be put away in the same way that the curriculum was. How can this be avoided? The teachers often seem to be too busy to do what seems important for their development. There is not a sense of urgency about professional development.

Table 4.5

Summary of findings from parallel journals: Fourth Collection Week 24

Participants	Researcher
Integration into learning processes At the beginning it was hard but after they used to it, it was easy.(4:3) The first time the teacher taught and after that they can teach each other. (4:3) It's only the first time it is difficult. But after that they get used to it, the young people they learn things very fast. (4:3) Reading, they have to read the text, and scrambled sentences will be good for structure lessons. (4:1) Word guessing can be good for vocabulary.(4:1) The FLAX they can do in the Reading Room. (4:1)	

Table 4.6

Summary of findings

	1st Collection Week beginning10 September 09	2nd Collection Week beginning25 September 09	3rd Collection Week beginning4 October 09	4th Collection February-March 2010
	Interest tempered by concerns	**Increased confidence**	**Readiness**	**Integration into learning processes**
Potential benefit of FLAX realised	**Potential benefit of FLAX realised** A good programme for the teachers to help them in their delivery	**They appreciated the value of the programme for their students** Participants realised that practice and repetition with FLAX had assisted them to gain more confidence They found the application easy to use **Pedagogical value perceived** The relevance of the application to learning	Ready to use Easy to use Helps to assist learning Fun Create own digital libraries Useful for students as a learning tool Useful in the Curriculum Useful for the teachers	It's easy to use It helps them to learn language Reading for meaning Learn language in a new way Integrate into the curriculum Assists metacognitive skills Students learn together. Peer scaffolding
Early interest was tempered with a range of concerns	Inadequate technological infrastructure in the environment Others felt quite apprehensive about trying new tasks and innovations Some participants felt that they were not ready for it because of their own shortcomings in vocabulary and grammar		Technological difficulties remain	Technological difficulties remain but feel that these will be addressed in the near future by the university

	1st Collection Week beginning10 September 09	2nd Collection Week beginning25 September 09	3rd Collection Week beginning4 October 09	4th Collection February-March 2010
	Interest tempered by concerns	**Increased confidence**	**Readiness**	**Integration into learning processes**
	Further training requested If we want to know more about this technology we need some guidelines, some instructions. We need more from Mrs J to teach us more about FLAX. To use detail How to use it perfectly. We need more guidelines about FLAX keep in touch with JF about this			
Future proof	There was recognition that development in IT would have a place in education in the future and the teachers wanted their university to be a part of that development.	They imagined using FLAX in the future		Students' perceptions of the university improved Future plans to build their own collections

4.5   Summary of findings

The findings showed that the teachers' early perceptions of the FLAX programme as being potentially useful to assist both their own and their students' understandings of the English language, developed over time. These early thoughts were mixed with concerns about lack of computer equipment at the university.

After attending further training in the application, it seems significant that their lack of capacity in the language and those of their students was not mentioned again. Instead, they were able to envisage with some clarity how the programme could be used and developed into the future, still acknowledging that were technical difficulties in the environment to be overcome.

These findings align with Bax and Chambers (2006) who suggested that there were four key issues to consider for teachers and planners when implementing Computer Assisted Language Learning (CALL). Two of these, in particular, are of significance: stakeholders' conceptions, knowledge and abilities, and training and development and support, which included dealing with technical problems. The findings showed that the support that the teachers received in the application relieved many of the concerns they had initially expressed and in fact seemed to unlock their thinking in being able to envisage how the application could be utilised within their setting. These changes of perceptions will be discussed more fully in the next chapter.

In relation to the broader view of curriculum change, these findings also support Holliday (1996) and Coleman (1996), that an ethnographic approach should be taken by external colleagues before implementing changes to safeguard the ecology of the learning environment. The researcher, although introducing a modern external application, took care in her approach to be sensitive to the environment and took care in choosing the data collection methods accordingly.

The findings showed that by the fourth collection, teachers recognised the pedagogical potential of the application, how it could be utilised in the curriculum and how it could be developed in the future. The only input from the researcher had been the three workshops to explain the programme.

This case study shows that careful scaffolding and professional development is a key which may increase teachers' potential to construct and co-

construct curriculum, and envision positive results for their students, to such a degree that even material constraints may be viewed as a temporary situation.

Chapter Five Discussion

5   Introduction

This chapter discusses the findings in relation to the research questions drawing on the literature in Chapter Two. The research questions are:

a) What are the teachers' initial perceptions (and apprehensions) regarding the introduction of a Computer Assisted Language Learning (CALL) innovation called FLAX into their environment, towards facilitating their classroom activity, and that of their students?

b) To what extent are these attitudes changed as a result of the intervention of this project?

c) How do the resulting understandings contribute to our understanding of normalisation of CALL into this environment?

In addressing the first two questions, the changes that took place in the teachers' perceptions and attitudes toward the introduction of the FLAX application, will be examined and the factors that contributed to these changes will be discussed. The other question reflects on the insights gained throughout the process and how these may add to a growing understanding of the normalisation of CALL.

These questions will be examined through three frameworks. The first follows ideas about CALL and traces the suggestions of Bax (2003), Chambers and Bax (2006), about the concept of normalisation of CALL into a setting. The second section of the discussion considers the findings in terms of my approach to the project and how they foreshadowed the neo-Vygotskian approach recommended in Bax (2011) when he revisited his construct of normalisation.

Finally, given the complexity of any teaching context recognised by Allwright (2006), the study is then viewed through a broader sociocultural lens using Engeström's (1987) expanded theory of Leont'ev's (1978) Activity Theory. Using these three views will demonstrate how, on one level, there was movement in the teachers' perceptions as they understood the potential of such an application and could visualise how it could be utilised in their environment to enhance teaching and learning practices, but, when viewed through a broader lens of Activity Theory, the complexity of the change process becomes more apparent.

5.1   Issues to consider when normalising CALL

The discussion will view four elements suggested by Chambers and Bax (2006) as issues to consider when implementing an innovation into a CALL environment. The premise of the development that took place over the period of this research is based on the statement made by Bikjer(1997) that "the economic, social, political, and scientific context of a technology is as important to its development as are its technical design characteristics" (p.10).

5.1.1   From fear and excitement to confident user – towards normalisation

The study showed that the teachers' perceptions of the application moved through stages of awe, excitement and anxiety to readiness and confident use. The total time taken for this change was nine months. This was from the time of the first introduction of FLAX by my colleague in June 2009, until after a period of implementation of three months in March 2010. However, the movement from initial excitement to readiness to implement took only six weeks, that is the duration of my visit to the site. The key to this movement may have been the interpersonal relationships that developed over this time, the extra support given to the teachers in the form of workshops, and the professional socialisation that occurred as they, both individually and in pairs, practised and experienced the application for themselves.

As stated in Chapter One, the paucity of paper-based resources to support study, both in the English language programme and also for students when completing their undergraduate thesis, was an ongoing concern from the student body during my volunteer placement. I noted that many of the students were familiar with digital technology and used it regularly for social networking. The idea of introducing digital libraries for the students using open source material seemed to be an option to be explored, in order to extend their options for language learning and academic study.

Chambers and Bax (2006) identified eleven issues that were common across the educational sector which may need to be addressed when introducing digital technology to the classroom. These were divided into four significant elements to be considered when normalising CALL. These issues will be discussed in relation to my findings.

5.1.2 Logistics

"For normalisation to take place, CALL facilities will ideally not be separated from 'normal' teaching space" (Chambers & Bax, 2006, p. 469).The logistics they described in regard to the spatial relationships of the CALL facilities and the normal teaching space is quite removed from the reality of the setting at UNTL.

A major and ongoing theme throughout the discussions and focus groups was the scarcity of computers and the insecure power supply. Teachers, while excited about the programme returned again and again to the reality of the situation, although they predicted that this would only be a temporary setback. Indeed, there have been major developments since 2009 with the advent of the resource room with all technological resources located there rather than in classrooms. The development of a self access model rather than classroom based CALL seems as though it may continue into the future.

The development of the resource room has impacted on the logistical factors, but not in the way that Chambers and Bax (2006) outlined, where there was an assumption that by the integrated stage computers would be located in the same teaching space as the students (see Chapter 2.2). The resource room at UNTL is set up in a separate facility which students can visit in their break time, or before or after lectures. The room is supervised by senior students, so that students can readily access the resources. At the time of research, there were two personal computers connected to the internet and eighteen other stand-alone laptops which were not connected to the internet. These were mainly used by students for word processing their class work and assignments but were easily adapted for FLAX use to be installed from a CDRom. There is also a reading library in an adjoining room with a library of donated books which includes a general range of study material.

The development of the resource room represents a major development in the department and it is possible that the teaching spaces and computers may now be permanently separated. This separation, although on a different trajectory from Chambers and Bax (2006), may represent a fortuitous development and one that is more conducive to self access learning. This physical distance gave rise to the notion by teachers that students could scaffold each other in their learning, rather than being directed by the teachers. As teachers observed students co-constructing each other's learning and working together in pairs, they commented

on the value of this type of learning. Potentially, this move could also signal a move towards students taking more autonomy over their learning, and may eventually represent a subtle shift in power relations between teachers and students as students take more responsibility for their own learning.

The addition of the resource room seems to have had positive benefits for the department. Since it was established, donations from NZAID, USAID and AusAID, as well as individual donors and NGOs, have assisted the department to provide more resources for their students. The advent of broadband and the increased number and quality of computers have opened up possibilities of access to information which was a concern in 2005-6 during my voluntary assignment. In late 2011, a new two-year project commenced, funded by AusAID which is focused on utilising and developing the resource room further to facilitate in-service and pre-service teacher development in Timor-Leste. These developments indicate that the provision of CALL at UNTL will continue to develop separately from the normal classroom spaces, and that FLAX will be normalised on a self access basis.

5.1.3   Stakeholders' conceptions, knowledge and abilities

The second area raised by Chambers and Bax (2006) also has great resonance with this study. They recommend that stakeholders' conceptions, knowledge and abilities be considered when working towards normalising CALL and that teachers and managers need to have enough knowledge of and ability with computers to feel confident in using them (p.472).

Throughout this study, teachers and managers at UNTL were positive about CALL and its impact at UNTL. There were visits to the University of Waikato from the Vice Rector in 2007, followed by two Deans in 2008, where the potential of the FLAX programme and CALL were demonstrated and discussed. These major stakeholders were at all times positive about the role for learning through this medium.Chambers and Bax (2006) thought that if CALL was to be normalised, teachers and managers need to avoid the 'technical fallacy', namely the view that the main determinant of success or failure is the hardware and software, or any other single factor. They emphasised the need for teachers to be aware that the success of CALL in their classrooms depends on several interconnected factors. There was perhaps an element of the technical fallacy in

the participants' initial response in that they thought that this programme, as a single agent, would achieve more than intended. This may have been because this was the first application of this type that they had seen demonstrated. Some of the comments such as "Flax is very modern technology" and "this technology will help or give a lot of advantages for the teachers" indicates that, perhaps, some teachers thought that the application could deliver more than it was capable of. However, the teachers' positive response towards the application and its tasks could be viewed as a first step of many interconnected factors which would facilitate further implementation and normalisation of CALL into the curriculum. It would be a reasonable expectation that with further exposure to other software, they would begin to view the FLAX application in a more realistic light, as perhaps one of the tools that could assist the teaching and learning process at UNTL.**5.1.4   Syllabus and software integration**

Chambers and Bax (2006) suggested that successful normalisation of CALL requires that it be properly integrated into the syllabus, and support provided for teachers who may be uneasy about their new roles. The findings of the present study showed that, after supervision and support, most teachers were able to envisage how the FLAX application could be integrated into the curriculum in their own subject areas.

The issue of providing ongoing support for the teachers was not addressed in the present study, but was addressed in the wider project when a follow- up visit to the University of Waikato was made in 2010 by the supervisor of the resource room and one of the senior students. They used this opportunity to further develop digital libraries and tasks. Another issue identified by Chambers and Bax (2006) was that progress towards normalisation may be enhanced by the use of 'authorable' CALL materials which allow teachers to tailor the CALL activities to better fit the existing syllabus aims, as opposed to the use of imported 'closed' materials. Users of the FLAX programme are able to author not only the activities but also the texts, and the findings showed that the teachers greatly valued this aspect of the programme. There is a limitless supply of either authentic or semi-authentic texts that can be created using FLAX which reflect life in Timor-Leste. For example, stories teachers wrote about playing football, about Ramelau, the highest mountain in Timor-Leste, and about Timor ponies are relevant, authentic and reflect their own lives. The teachers were excited about the

prospect of both students and teachers creating new texts for the syllabus that reflected their own situation, rather than continuing to read texts which reflect only external cultures and situations. I consider the contextual sensitivity made available by this programme is very useful, as it brings the student's own world into the curriculum and draws on and engages with their prior knowledge. Hence, this aspect of syllabus integration is indeed assisting the normalisation process.

5.1.5 Training, development and support
The findings in relation to teacher training being delivered in a collaborative mode rather than in a top down expert-to-novice mode are congruent with the recommendations of Chambers and Bax (2006, p.475). This collaborative mode seemed very appropriate and will continue in this setting to be the major mode of training and development as the teachers and students implement and adapt the FLAX programme to meet their own needs.

However, the initial workshops offered to the teachers were initially delivered in top down mode as this seemed appropriate at that stage. The discussion in Section 5.3.1 about modelling explains why a teacher-led method to support their knowledge was chosen initially, as teachers were learning not only the technological aspects of the programme but also were required to apply their English language knowledge at the same time, and for about half of the participants this was their initial experience of CALL. Figure 5.1 shows teachers at one of the FLAX workshops.

Figure 5.1

One of the workshops provided to familiarise teachers with FLAX.

By the final collection five months after its introduction, however, the mode of instruction had changed substantially, as at this time, a senior student was observed giving training to other students by sitting alongside them and supporting them as they learnt the application. (See Figure 5.2).This method reflected Chambers and Bax's comment that training becomes an ongoing process (p.475).

Figure 5.2 Senior student scaffolds another student's learning as she undertakes a FLAX task.

The final two issues highlighted by Chambers and Bax (2006) seem to be the ones that may ultimately be the defining issues in the move towards normalisation of CALL at UNTL. Chambers and Bax (2006) state that successful

normalisation requires that teachers' concerns about technical failures and their lack of skills to deal with such failures, should be addressed and overcome by means of reliable support and encouragement. I anticipate that the technical issues already referred to many times by the participants may continue to be a constraint towards normalisation of CALL at UNTL but there are also factors which assist in the process. The literature review in Chapter Two shows that as long ago as 1989, and subsequently in 2006, teachers in CALL, researchers and practitioners have been acknowledging the constraints in their settings that affect the normalisation of CALL, such as a lack of appropriate software and hardware, but also stating the importance of CALL and encouraging teachers to develop their skills with technology. In the context of UNTL in Timor-Leste, the leap into digital technology seems to have been a manageable one. FLAX is designed for low technological environments as it can be introduced with a standalone computer with a CD Rom, making it accessible for the teachers and students at UNTL. So the move into a digital environment for learning is within the capability of the department and fits ecologically into the environment. The issue of electricity supply and lack of hardware which was a recurring theme in the findings can also be regarded as perhaps a temporary issue. Donor countries have been very supportive of restoration of the university and of the infrastructure in Timor-Leste, and the economy of the country is developing. I anticipate that as capacity grows in the institution the technical and infrastructural issues will be overcome. The management at the faculty level are also supportive of the idea of the university improving its academic status and perceive that CALL could assist this goal. I would also anticipate that issues such as virus control and management of Information Technology systems at UNTL will be supported by their own graduates in the future as human resource capacity develops. The final issue raised by Chambers and Bax (2006) was the argument that although technical assistance is important, it is insufficient on its own in supporting teachers in fully normalising technology in their teaching, and that teachers need pedagogical support also. The findings support this view. At the time of the visit, regular teacher professional development workshops were commenced in response to an invitation by the head of the English department. At the same time, as part of the wider project, three action research projects were started with support from both UoW and UNTL. Teachers are also being supported by the Ministry of Education to upgrade their qualifications in donor countries. In addition, an AusAID project

began a curriculum support project from late 2011 which will support the department in curriculum development for at least two years. In summary, the findings showed congruence with Chambers and Bax's (2006) recommendations on implementing CALL into an educational environment. The movement in teachers' attitudes from being positive but cautious about FLAX, to being confident and capable, was noticeable after they had received further training in the application and were able to practise at their own pace. It was also evident that when they began to feel more capable they were able to envisage ways to incorporate the application into the curriculum and how to adapt it to their own context. The location of CALL activity in the resource room enabled teachers to see new possibilities for students' learning in self access mode. These movements in the teachers' perceptions demonstrated that normalisation of CALL was occurring in the setting, as the participants seemed to have capacity to adapt to new digital environments and also to adapt the technology on offer to their own situation. It seems as if normalisation of CALL into their environment was taking place first in teachers' thinking and cognition, whilst at the same time they were acknowledging that there were physical and environmental constraints that were beyond their capacity to influence.

5.2   Strategies and actions for normalising CALL
5.2.1   Social interactions

As this study is set in the context of curriculum change and review, I will discuss some of the principles, strategies and actions taken in this study and discuss the degree of intervention considered appropriate. As discussed in section 2.1, the importance of working within the ecology of the setting was a key principle of this research project, but at the same time I needed space and time with the teachers to familiarise them with the innovation.Van Lier's broad ideas of three curriculum principles, awareness, autonomy and authenticity, are supported by strategies and actions, so it was necessary for me as a researcher to hold these three principles in my mind while considering what strategies would be used to familiarise participants with the innovation. I decided that daily interactions with and between the participants and a scaffolding strategy that "pulled them into a challenging but attainable area of work" (van Lier, 1996, p. 194), might be a useful way to proceed with the study. The interactions would be social interactions while working on FLAX, conversations before, during and

after the workshops, paired discussions between the participants and focus group discussions. These strategies and actions were designed so that I could discover, formally and informally, to what extent teachers' attitudes changed after a series of workshops to scaffold their experience of the new innovation. As outlined in Chapter Two, I was conscious of the dangers of 'tissue rejection', so I proceeded on the basis that a level of mutual trust had already been established between us.

A discussion of normalisation of an innovation into a setting should examine the different roles taken by the different agents, so my role in this study may warrant a brief discussion. I undertook a dual role which was to introduce and familiarise participants with the innovation and then to research their response to it.In returning to the site, I understood the range of needs at UNTL, and in consultation with teachers and administrators thought that introducing FLAX may assist the students to move into a position whereby they would be able to gain access to more resources for their language study and academic development. I considered that the innovation was a useful adjunct to the setting, and hoped that its introduction would not bring disjunction or confusion. I took an active role when introducing the innovation, scaffolding the teachers' experience by running workshops. Teachers had opportunities to experience FLAX and to trial it themselves. When they indicated they needed further training, this was provided in a hands-on manner by arranging for them to work in pairs on FLAX for as long as they needed.The collection of data took place at two weekly intervals over the six week period of my visit as the participants shared their experiences and thoughts about FLAX with each other in the form of oral reflective journals, and also coming together in three focus groups to share their thoughts in a group, an unusual event in itself, but one which the teachers appreciated. The research showed that the teachers welcomed the innovation for a number of reasons, not the least being able to keep up with the technological developments in other areas of South East Asia and the rest of the world. After some initial nervousness about the application, they responded positively and soon were ready to use the application with their students, having had opportunity to try it themselves. To my surprise, they were able to envisage of range of different ways that the application could be implemented in their classes and described these in some detail.

 Learning in pairs, having fun and learning, learning in their own time, were some examples of sound ways of learning and reflected current practice throughout the

language teaching and learning cohort. They were also pleased that texts that reflected their context could be utilised in the application. Three months later, the application was implemented and the teachers had reached a degree of normalisation, especially in relation to this programme.However, throughout my visit there was an undercurrent of concern about the infrastructural difficulties that might hamper full implementation. Teachers pointed out the low ratio of computers to students and that there was little technical support available at that time. Electricity supply too was uncertain. I noted though, that the teachers viewed these difficulties as temporary setbacks that would be fixed in the future.

 My intent when introducing the programme, was to foster electronic means of language learning as well as support possibilities for further academic development by the student body via electronic means. This well-intentioned aim, when examined through a sociocultural historical perspective lens, may seem a little naïve and hasty to some when there were clearly a number of material resource constraints that might prevent the full implementation of the application. The study shows that the results were, on the whole, positive when answering the first research question; to what extent does the implementation of FLAX contribute to the eventual normalisation of the digital facilities?

On balance, I consider that the greatest benefit to the department may have been its contribution to the normalisation of digital facilities at the university. The possibilities of electronic means enabling students to access ideas from academics around the world will, I think, eventually greatly enhance the teaching and learning at the institution. The FLAX programme itself will benefit both students and teachers by enabling them to develop their working knowledge of the English language. The programme is available in other languages, so has the potential to be used in Portuguese and Tetum, the official languages. The main benefactors of the introduction of this application will be the students, digital natives, who will quickly absorb any new technology introduced to the university although there will still need some pedagogical guidance.Another benefit of the study was pedagogical, in that it demonstrated that teachers with appropriate scaffolding and encouragement can extend their reach and envision new ways of teaching and learning with their students. I would therefore partially support Coleman's (1996) view that introducing new / foreign ways of teaching may be "merely tinkering with the ritual"(p.80), but respectfully suggest that a modelling

and scaffolding process, where the learning is co-constructed in a collaborative manner, has something to offer in development settings. In this way, it seems teachers can explore, discover and implement for themselves new ideas and innovations, adapting them to the environment so that the ecology of the setting remains intact. A practical expression of this could be coordinating or working with teachers who carry out action research within their own settings. This brief discussion of my own role in this case study suggests that there may still be a role for external intervention in development settings and that a collaborative model may be a suitable mode of external intervention.

5.3 Normalisation revisited

It was only after I had identified my research space and completed the data collection that Bax's subsequent work was published in 2011. In this, he revisited his earlier work on the normalisation of technology in language education and other aspects of the concept that have arisen in a number of fora that needed addressing or clarifying. He acknowledged that the original article 'suffered from a lack of theoretical grounding,' and that it may have created an assumption that normalisation of CALL brought 'unalloyed benefits' (Bax, 2011, p.2). He recognised that simplistic assumptions about new technologies which are promoted as either being so powerful they will change every aspect of our lives or 'so evil as to be entirely harmful' are not helpful. He adds that a more balanced view is to accept that interactions between society and technology will be complex, probably involving a number of factors interacting with each other (Bax, 2011, p.3).

He argues that the debate on normalisation should be set within a social constructivist-contextualist framework which states that "the economic, social, political, and scientific context of a technology is as important to its development as are its technical design characteristics"(p. 4).He suggests a neo-Vygotskian approach which sees the debate on normalisation within a social constructivist contextualist framework rather than a sole agency framework. He recommended that no assumptions should be made concerning the usefulness of the innovation, and that teachers and implementers need first to question closely the potential value of the technology. His suggestion was that a 'needs audit', whose first

question would be to consider whether the technology is in fact necessary and useful, be carried out before the introduction of any CALL innovation.

A needs audit for this project was carried out over a three year period, although the process did not have this title at the time. The curriculum needs of the site were gathered during my volunteer placement, which was followed by a visit from an UNTL teacher to UoW for nine months in 2006. After receiving funding from the Faculty of Arts and Social Sciences at UoW, the Vice Rector from UNTL visited the university in 2007 where the needs of the English department were discussed and clarified, and an agreement for the two universities to work collaboratively was formalised. In the following year, two deans of the faculty from UNTL visited UoW for further discussions. At this stage, the idea of digital libraries was mooted and a visit made to the Computer Science Department at UoW by the visitors from UNTL. Another member of our collaborative team introduced FLAX as he attended a Conference in Dili in June of 2009 and was available at that time to introduce the application to interested teachers and students.

After arguing for a needs audit for those contemplating the introduction of CALL, Bax (2011) then suggests five areas of effective educational practice for teachers for implementation. These five educational practices will be discussed in the light of the findings from the present study. The discussion shows that each of these five elements of practice, strategy and accompanying actions were contained in this study and, that the results further illuminated steps in the process towards normalisation of CALL into a setting.

5.3.1 Five elements of effective educational practice
Access and participation

Access and participation to resources, both material and human, have been made available by various stakeholders, such as the Computer Science team at UoW, the administration and teachers at UoW and UNTL, which has enabled the facilitation and appropriation of the FLAX resource. Unlimited access to the resource room at UNTL was also given during my research visit. Students in the subsequent semesters were then able to access FLAX on those computers where the programme was installed. This open access and willingness to participate and

share prior knowledge from the various participants and stakeholders has facilitated and supported the steps towards normalisation of CALL at UNTL.

Participation and interaction with others including a social dimension and even an emotional dimension, is also frequently of value in education.

Over this period of time, many ideas and discussions were held between the members of the project as we attempted to form plans to strengthen the curriculum at UNTL. The FLAX innovation was one of the projects in the plan. Social interactions during this time continued, as between 2006 and 2010 there were five occasions when visitors from UNTL were accommodated at my home while visiting UoW. On these occasions, informal discussions in a more informal setting assisted me in understanding more about the context, and a sense of trust and commonality of purpose developed.

Interactions between teachers and students

The findings showed that teachers observed and commented favourably on the students collaborating and learning in pairs and small groups. This seemed to occur naturally as there is a culture of sharing a scarce resource in Timor-Leste. Teachers made such comments as: "…while they are doing the tasks they are talking, explaining to each other" (4:3) and "…we can discuss more in the classroom in groups around a laptop, about two or three persons" (4:11).

The discussions between teachers about aspects of FLAX were a forerunner for teachers' professional workshops, which began during my 2009 visit in collaboration with a visiting Fulbright scholar. We invited teachers to join us in weekly workshops and the first meeting consisted of a needs analysis to ascertain the areas that teachers would like to discuss. Shortly after the visit, three action research projects started between Waikato and UNTL. Two of these have been presented at subsequent conferences and the findings disseminated in journal articles.

It is difficult to determine the exact time, but the growth of this community of learning of teachers at UNTL may have had its genesis in the discussions between colleagues about FLAX. The professional development workshops and the action research that occurred a short time later are positive signs that the teachers are developing a collegiality where they further share their ideas about learning and teaching.

Participation and the affective area

Another important aspect of the findings is that they teachers thought that there were benefits in the affective area for themselves and their learners. The comments suggested that the teachers understood the link between having fun, being relaxed and learning;"...sometimes they come in their relax time. Then they sit on the computer and they may play a game. It's like a game but it's also learning" (4:3).The connection between learning, participation and having fun seemed to resonate as this was perhaps the first time in this setting that I heard learning described in these terms.

Expert intervention

Bax's second key element of effective educational practice supports the idea of 'additional intervention from a relative expert,' another Vygotskian precept. He says that in addition to this element of access and participation, it is essential to include the dimension of expert intervention in the planning process as access and participation are not enough by themselves.

Wertsch's notion of how access, participation and expert intervention work together has been confirmed in this study. He argued that the "first stages of acquaintance typically involve social interaction and negotiation between experts and novices or among novices" and that by participating in this social interaction interpretations are first proposed and worked out and therefore, became available to be taken over by individuals (Daniels, Cole &Wertsch,2007, p. 187). The time spent as a volunteer established me both as a colleague and as a visitor with expertise to share in some areas of the curriculum. In some aspects though, the teachers were the experts and I the novice. Throughout the time spent at the site they assisted me to understand the background of socio–historical and cultural issues.

Expert modelling

In Chapter One, I referred to my decision to try to model good practice as a means of building capacity in 2005-6. I view an expert model as being a more able peer, who may have had the benefit of additional training and experience. By modelling sound approaches to teaching and learning practice, there is an expectation that there may be uptake in some or all of these approaches by peers. On my return in 2009, I again chose modelling as a means of supporting the teachers as they learned how to use FLAX. The interactions took place through a

series of three workshops over a period of four weeks and, during this time, participants appropriated the knowledge and gained confidence in how to use the application by themselves. I took as many opportunities as I could to check that they were feeling confident about the application and they also had opportunity to reflect on their thoughts and feelings as they recorded their oral reflective journals. The oral reflective journals revealed that they, in turn, intended to model the application with their students.

Expert scaffolding

Bax (2011) states that scaffolding is "interaction with an expert, who actively 'scaffolds' the experience, through planning, feedback and advice, constantly checking that learning is taking place"(p. 10).The data shows that the use of workshops and scaffolding during the visit was a key to promoting normalisation of CALL in the setting. The set of three staged workshops helped teachers move from a position of concern about the application to a position of confidence and readiness.

These workshops aligned with van Lier's (1996) features of scaffolding which were principles of continuity, contextual support, intersubjectivity, contingency, handover and flow. The findings showed that these teachers were 'pulled into a challenging but attainable area of work,' the Zone of Proximal Development. Their response at the start of the process showed that the majority of participants viewed FLAX as a challenge and that the workshops provided contextual support in a safe environment. Throughout the workshops, there was opportunity to repeat the actions and engage together. The workshops were staged so that they could move to an area of greater difficulty, or they could repeat an activity if they needed to (the contingency and flow principles). By the end of the six week period, the findings showed that teachers were ready to implement FLAX with their students.

The comment from Fullan (2001) about key factors of participation, initiative-taking and empowerment, sometimes not being activated until the change process has begun may have been illustrated in this study too, as it was only in the latter part of the study that teachers were able to envision ways to utilise the application and adapt it to their own setting. By the end of the six week visit, there were only positive comments about the potential of the application and their confidence to use it. There were no further comments about their own

limited capacity or their ability to work with the application. This change in perception seems to illustrate the effect that appropriate support has in terms of their self- efficacy and self-perception of their capacity. Furthermore, it was after the workshops that teachers discussed ideas of how they could use the application, in which settings it could be used and how it could be further developed. There were some signs by the end of Week Six that ownership of the programme was starting to take place and an even stronger sense of ownership was evidenced after three months of implementation.

The findings also showed that teachers had noticed students' scaffolding each other's learning. "...because the other one was showing the new one" (4:1); and "...while they are doing the tasks they are talking, explaining to each other" (4:3) were two comments made during the journalling process. Teachers commented how effective it was to learn in pairs, to learn from each other and that, although it looked like fun, they thought the students were learning. As soon as they felt confident about how to use the application and ready to use it, there were no further comments about their own lack of capacity. They also seemed to be able to envisage with some clarity how they would implement the applications. Comments after three months reinforced this finding, as both students and the teachers on site at the time seemed to be confident users of the application

Challenge and contradiction: challenge in a supported environment

The fifth element of effective educational practice outlined by Bax (2011) refers to challenge and contradiction that comes from an expert in which may cause the learner to rethink and review a position or idea. (Bax, 2011).

I attempted to model a critical, neutral mode when introducing the application, as there was a high level of challenge for the teachers. The assistance provided by the mediating tools of FLAX and its affordances and the intervention in the form of workshops assisted participants to extend their zone of proximal development and to experience the potential of both the application and their own capacities with CALL. Their journal comments after the visit showed that they had moved in their thinking from a position of awe and excitement to one where

they understood the pedagogical benefits that could be gained through CALL by both they and their students.

5.3.2 Summary

Bax (2011) states that none of these five elements of effective educational practice is indispensable to learning in itself, but they each have important contributions to make as they emphasis the role of mediation in the learning process. Using a neo-Vygotskian approach has illuminated this research and shown that steps towards normalisation which invite participation while acknowledging the role of expert intervention may be a sound approach when introducing an innovation to a setting.

However, I would like to view the setting through one more lens. The participants in their discussions frequently raised challenges and contradictions that might impede the normalisation process. To answer my final question, I will now discuss the setting through Engeström's Expanded Activity Model (1987). Observing the change activity that was occurring in the setting, I found that there were influences beyond the immediate setting which were impacting on the trajectory of normalisation.

5.4   Broader view shows complexity of normalising CALL

The previous themes have shown that introduction of an innovation moved teachers towards normalisation of CALL into their setting, and that they gained confidence as they envisaged various ways of incorporating the innovation into their setting, in and around the classroom. We have been considering this activity through Leontiev's original model of Activity Theory.

TOOLS AND SYMBOLS

| SUBJECT | | OBJECT | → | GOAL |
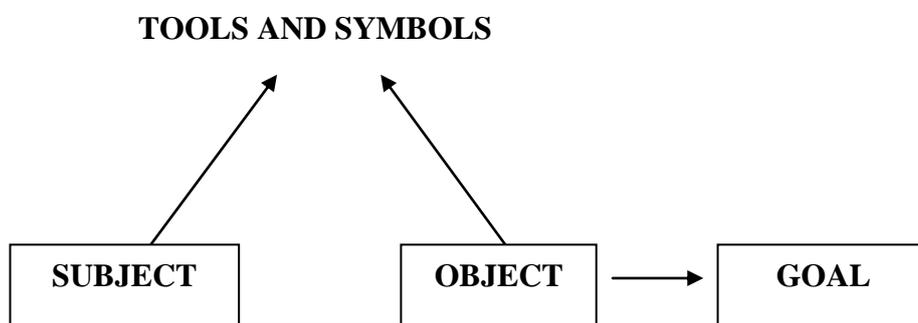
Figure 5. 3

Original model of Activity Theory, (Leont'ev, 1978).

However, it is essential to view the setting from a broader lens and Engeström's (1987) Expanded Activity System assists this perspective. When analysed through this view, the findings show that all of the systems which combine to produce activity are interlinked, and show that the setting is very complex as changes in each activity may influence the outcome of the activity.

Activity theory demonstrates that there are many facets that contribute to the outcome, in this case improved learning outcomes for students at UNTL. There is a complex set of activities in the nodes that contribute to, or have the possibility of changing, the learning process. The systems are interlinked and are interdependent. Engeström's activity theory expanded Leont'ev's original activity theoretical approach to show that the outcome of an activity, as well as being influenced by subject, mediating tools and object, is also influenced by other factors, namely rules, activity and division of labour. These nodes form part of the activity system, but are also outside it in terms of day-to-day classroom activity, taking place between teachers and students and the mediated activity occurring in the context. This discussion shows that changes in one area lead to contradictions in another area which need to be resolved.

New Tool

FLAX

Mediating Tools

Teachers in the English Dept UNTL Students in the English Dept

Students learn English for gaining Licenciate in Education. Teachers teach English and other curriculum. subjects

Competency in English language Produce thesis

Subject

Object

Outcome

Rules

Community

Division of Labour

Rules which determine allocation of shared resource; who, when, where, duration etc.

UNTL teaching and admin staff, HOD's and Rector, Ministry of Education, parents and relations of students, Waikato team,

Teachers teach discrete subject areas Full time and part time staff some balkanisation effect

Figure 5.4 A contextualisation of Engeström's Expanded Activity System Model (1987)

Engeström's Expanded Activity System Model

Engeström's Expanded Activity System Model of activity theory shows a broader picture of the activity and it is through viewing this through the other activity nodes we can see a level of fragility in other activity areas in the context. The fragility exists because of the inevitability of change in these dimensions and because changes in one area impact other areas of activity.

Object

The object of the activity is to realise the following outcomes in the English department at UNTL; a Licentiate in Education which is awarded after successful completion of the degree course and defence of a thesis composed in English. The change of tools instigates a change as it means that information and study materials become more readily available to students. At the micro-level this means digitalised texts and tasks (FLAX) which improve language learning outcomes for English language acquisition, and at the macro-level it means access to the world of academia for students and teachers. This, in turn, may represent change in power relations between subjects, as students become more autonomous in their learning and less reliant on transmission methods of teaching and learning.

Subjects

The principal subjects in this activity are the teachers at UNTL teaching in the English Department, some of whom are full time and a few of whom are part time. The students who are undertaking a four year course of study for a Licentiate in Education are also the subjects in this activity. Together, using the mediating tools available, they co-construct ways of achieving the object.

Tools

The tools available to the subjects are oral and written language (English, Tetum and Portuguese), classrooms, whiteboards, books in resource room, textbooks, digital library (FLAX), computers in the resource room, and a limited supply of paper and photocopying. The ongoing mention of small numbers of computers and the erratic power supply limit the effectiveness of the tool to perform and provide a teaching opportunity for more than a few students at a time. However, the advent of the new tool, FLAX, and the use of this tool is bringing a change in teachers' perceptions about practice in the environment.

Division of labour

The effects of balkanisation (Hargreaves, 1994) in the department are starting to change, as teachers join in action research groups, meet for informal work discussions and attend regular professional development meetings in the department.

There are signs that roles within the department may change as some teachers, more than others, have become engaged with CALL and its potential to develop learning in the department. This has the potential to change relationships between teachers, as some may take leadership roles and move from a horizontal to a vertical division of work. A senior student who showed great interest in the project was the first student to visit Waikato to develop his knowledge of FLAX and CALL. He may have some influence over the development of CALL in the future in the department, which in turn may lead to a change in the perceived roles of students and teachers.

However the interdependency between these areas may be illustrated when considering the interrelationship of the tools, subject and the division of labour, if and when there is a need for maintenance of the tool. Examples of this may be the response from the department to a computer malfunction, or perhaps the rules surrounding accessibility to computers by students to achieve their academic or language learning goals.

Community

The community of learning at UNTL has a hierarchical structure. Teachers are responsible to the Head of Department who is responsible to the Dean of Faculty. The Rector and three Vice Rectors oversee the administration of the university and its eight faculties. There was a change of Rector in 2010. The former rector was active in curriculum development and professional development for teachers, and the new rector, appointed in 2010, had already visited UoW and could see the value of introducing CALL into UNTL. He facilitated the process of disseminating the findings of the Action Research projects through two conferences. Such changes in the hierarchy may affect the normalisation of CALL in the English curriculum.

Rules

UNTL is a national university so has an equitable entry system resulting in large intakes every year. Resources at the university are scarce and therefore shared between a large staff and student body. There are rules that determine the distribution of these resources. As CALL develops at UNTL, new or adapted rules to ensure equitable access to the digital resources will be necessary, and the rules and the subjects will adjust according to the extent to which they have more or fewer resources or greater or lesser access to the facilities.

5.4.1 Summary

Viewing the data simply through the three nodes of the activity, the teachers, the students and the new mediating artefact, FLAX, it seemed as if steps towards normalisation of CALL in the setting are proceeding well and could be reached in the near future. However, when viewed through the expanded activity model, where each activity area influences another, the fragility and fluidity of the setting becomes clearer with potential to influence the eventual outcome. The expanded activity system model shows that activity is not a stable system, but that changes are occurring all the time. Changes that occur in the expanded system, in the community, division of labour or in rules sectors influence the activity of the more stable sectors of the triangle of activity; subject, object and tools. The wider context, therefore, has an impact and needs to be considered when introducing a new innovation to a setting. This study has shown that the words of Bijker (1997) are still relevant more than ten years after being written: "The economic, social, political, and scientific context of a technology is as important to its development as are its technical design characteristics" (p.4)

Chapter Six Conclusion

6   The case study

6.1   Study purpose

The purpose of this case study was to gain some insights into teachers' cognition throughout a process of introducing a CALL innovation into their environment, the English department at the national university in Timor-Leste (UNTL). The case study investigated their ideas about an innovation called FLAX which uses digital libraries to develop language learning tasks. The theoretical framework for the study was the concept of 'normalisation' (Bax 2003, Chambers and Bax 2006, Bax 2011) which refers to a state achieved when a new technology becomes invisibly integrated into everyday practice. Teachers in this study were invited to reflect upon their perceptions of the FLAX programme, from the initial introductory period through to implementation. The data were collected over six weeks from ten participants, who were asked to discuss their ideas about FLAX in pairs, guided by pre-prepared open ended questions. The questions enquired how teachers thought this application could enhance language learning activity in their department, and to what extent they thought they would be able to adopt it into their courses. Focus groups were also held at entry and exit points of the visit to the site. I kept a research journal which was included in the data. During the visit to the site three workshops were given to the participants to familiarise them with the programme.

6.1.1   Summary

Bax (2003) outlined three approaches to Computer Assisted Learning; a restricted approach with limited tasks, an open stage in which students interact more with the computer and with each other, and an integrated stage where technology will be normalised into classroom use and "go almost unnoticed"(p. 24).

This study suggests that the sociocultural approach utilised in the introduction of CALL to this setting resulted in normalisation taking place in teachers' minds before the physical reality of integration, when the technology becomes invisible and thus normalised.

This may in turn suggest that, when technical and infrastructural constraints are no longer present, participants may move rapidly from the

restricted stage through to the integrated stage, as the normalisation that has occurred cognitively prepares them to be receptive to rapid changes that occur and will keep occurring in their environment. I would suggest then that normalisation is a cognitive notion, which may or may not be related to the technical equipment in the environment, but has more to do with being able to envisage the capacity that CALL enables in that environment.

This study shows that the process of normalisation of a CALL innovation into a setting is facilitated by consideration of both social and technical issues. Elements of implementation outlined by Chambers and Bax (2006) provided a framework through which to investigate steps towards normalisation of CALL. The findings indicated that the needs of teachers as the key stakeholders, and any concerns they may have, should be addressed by making sufficient training and support available, in both a top down or in a collaborative manner. In each case, principles of scaffolding apply. Technical issues in terms of appropriate hardware, software and ongoing technical support are critical areas for normalisation, with logistical concerns regarding the location of the computers and students being a secondary concern.

The study revealed some insights into teacher cognition through the series of discussions teachers had together either in pairs or in focus groups. Perhaps the most revealing insight was that the process of normalisation seemed to take place in the participants' cognition, before the physical evidence of normalisation was realised. By the end of six weeks, teachers had become familiar with FLAX through attending workshops and spending time using the application. The discussions revealed that they could envisage how they could utilise the programme in their subject areas. They also perceived the pedagogical value of students learning cooperatively in pairs and groups in a self-access mode. They recognised the educational benefits that would occur when motivated students accessed FLAX in their own time and enjoyed the experience. These comments were made while students were away from the campus during its closure, and they were substantiated after a time of implementation three months later after the students had returned. Students very readily took to using FLAX in the resource room, and more proficient students scaffolded the learning of their peers in informal ZPDs. The data showed that participating teachers had moved

towards a position of normalisation in their thinking, while acknowledging that there were still technical and infrastructural challenges at the site.

Secondly, the findings showed that introducing a technical innovation into a site is a social process. Bax (2011), published after this case study was conducted, revisited his earlier notion of normalisation, and posited that Vygotskian sociocultural perspectives could enlighten our understandings into how and why technological normalisation can take place. Bax then proposed that areas of access and participation and expert intervention, are elements of effective educational practice for teachers when introducing a technological innovation. The present study, with its intent of investigating how digitised means could assist the language learning processes at UNTL was essentially a sociocultural process. Personal relationships and common understandings were formed prior to the commencement of this project, and indeed laid the social foundations for this case study. The means of gathering their perspectives, and the support provided in workshops, was a social as well as professional engagement between the participants and among the participants and myself.

Finally, when viewed through the lens of Engeström's expanded Activity Theory framework, the findings reveal the inherent complexity of curriculum change. The study shows that the subjects of the activity were on the whole positively impacted by the innovation, which introduced the possibilities of a new mediating artefact into their environment. They could envisage new ways of learning and teaching which could influence the eventual outcome of their department -positive learning outcomes for their students. The expanded model shows that the activity is also affected by other factors that intersect with this activity and heavily influence it and the eventual outcome; the rules, be they explicit or implicit, the community of practice and the division of labour all have impact on, and give rise to changes and contradictions in the activity and so the complexity of introducing an innovation into a situation becomes apparent. It is important for stakeholders and decision-makers to take into account the wider picture when considering the implementation of a CALL innovation into their setting to assist the process of change.

6.2   Limitations of the study

A limitation of this case study, as with all case studies, is that the findings of the present study cannot be generalised to other situations. There may also be limitations to the case study due to my own relative inexperience as a researcher, and perhaps because I was researching the site as a single researcher.

Among the limitations of this study were the constraints around the duration of the study. I would have preferred to have a longer time-frame than six weeks to spend with the participants, especially at the beginning of the visit when I was installing the programme and experiencing some unexpected technical difficulties. However, I was limited to six weeks as I needed to take leave from my work to conduct the research, and it was inconvenient for both my work and my work colleagues for me to be absent for a longer period. I would also have liked an opportunity to return to the site after my visit to make a personal evaluation of the implementation of the innovation, but this was also not possible due to financial and employment constraints.

Furthermore, the case study was limited in terms of the setting, by the unexpected contextual factors that arose with the closure of the university for the duration of the site visit. Although students were not invited to participate in the study, there had been an expectation that there would be more opportunity for students to interact with the programme and that teachers' comments could thus reflect some of the students' views. The instability of the infrastructure with intermittent electricity supply and lack of consistent connectivity had some impact of the study, but adjustments were made so that the data collection was able to be completed within the allocated time period.

The methods chosen to gain participants' reflections were oral reflective journals, which were gathered in paired discussions and in groups. When commenting on the methods used in this study, Jill Burton noted the care that was taken to ensure that the methods were 'culturally sensitive and educationally sound'. However, she suggested that a combination of both reflective dialogue journal writing and more interactive oral methods might have given me more options to probe and engage with the participants, and also resulted in further data for triangulation. (Field & Burton, in press). On a practical level, Burton noted that oral reflective journals require a

considerable amount of time to transcribe, whereas written journals can be read rather more quickly and analysed immediately.

6.3 Implications for the concept of normalisation coming from the study

Normalisation is a state which occurs when the technical artefacts or tools become invisible and fully integrated into a setting. This study examined the impact of a Computer Assisted Language Learning innovation being introduced into a university setting which had little or no experience of CALL at the time. In terms of the three approaches to CALL described by Bax (2003), the study showed that the research site is still in the 'restricted' stage due to the very recent introduction of computers and Computer Assisted Language Learning. However there are signs that the 'open' stage is also being experienced as students are now interacting with each other on the computers in the resource room. This development of a Self-Access Centre where students have more opportunity to become self-regulating and take more responsibility for their learning may be a major step towards normalisation in this setting.

Almost ten years have passed since the concept of normalisation was posited, and I would suggest that in this setting, and possibly other development settings, that it is only the constraints of the inability to access suitable technical resources, technical support and a robust infrastructure, that prevent these settings from moving readily into the integrated stage. The students, 'digital natives', have already reached the integrated stage of computerised technology in their personal lives by their regular and extensive use of email, word processing, texting, and the social media. To a lesser extent, their teachers are also attuned to these media. Normalising CALL within their educational setting requires little in the way of technical education for them, but rather attending to infrastructural constraints such as adequate hardware, access to the internet and technical support. When these are resolved students, even more quickly than their teachers, will become normalised to CALL, and be able to more readily achieve their academic goals.

Chambers and Bax (2006) suggest four issues that should be considered when normalising CALL; logistics or consideration of physical placement of computers in relation to students, stakeholders' conceptions, knowledge and abilities, syllabus and software integration and training, development and support.

The findings of this case study converged with their views but found that consideration of stakeholders concerns, training and support issues and integration of CALL into the syllabus resonated much more than did the issue of logistics. The study showed that addressing the issue of support for staff and providing appropriate training were critical points in the research, and after they were addressed, there were further moves towards normalisation.

The findings in regard to normalisation occurring in teachers' cognition and conception before the full process of integration and normalisation occurred in real time, were revealed through the sociocultural approach adopted in this study. The idea of normalisation as a social construct was explored in Bax (2011) when he revisited the concept. The neo-Vygotskian approach he recommended (2011, p.p. 6-13) in the five elements of effective practice were all embedded in this case study to a greater or lesser degree. The scaffolded approach, which was one of Bax's elements of expert intervention, was utilised throughout the research process in this present study, as was a thorough needs audit. My reflective journal shows how pleased I was at the response from participants throughout the research process. In subsequent work at my organisation where I am introducing FLAX to new participants, I am approaching the task as a social process, having first taken care to ensure that technical elements are in place.

Another finding was that teachers were able to visualise ways to use CALL in their teaching and were motivated when they saw students learning autonomously. It seemed that there was a movement in some of the teachers' conceptions about how learning may occur in different ways and settings. There seemed to be an appreciation of the value of students becoming more autonomous in their learning, and the benefits of students being motivated and being able to access knowledge globally.

In this study steps were taken towards normalisation of CALL at UNTL as teachers' perspectives moved from being tentative about FLAX to a position of confidence and readiness to use the programme. This is noteworthy in that shortcomings in regard to the technical aspects of implementation were still apparent at the end of the enquiry. However, I consider the teachers' thinking and attitudes towards implementing CALL had undergone a normalisation process as they could discuss the actual and pedagogical benefits of the programme with some clarity at the conclusion of the visit.

6.3.1 Implications for language educators

Introducing a technical innovation into a setting is essentially a social process

Among the implications arising from this study are that introducing a technical innovation into a setting should be viewed as essentially a social process, or at least a sociotechnical process. Bijker (1997) discusses this concept fully in terms of how society and technology influenced each other. In discussing the characteristics of a sociotechnical approach, Lieshout, Bijker and Egyedi (2001) developed a theoretical framework for the study of the societal introduction of educational multimedia. They posit that technology can be studied as a social phenomenon which focuses on the meanings attributed to technological practices by the various social groups.

This study converged with their position, which states that responsible stakeholders should negotiate the meaning of the computer in an educational context, and that this negotiation comprises social and technical factors alike, which can be explained by the metaphor of a seamless web of relations. At UNTL there was support from administrators at the university, teachers and students alike for implementation of CALL, and a willingness to undertake training in the programme. All of these stakeholder communications were negotiated and contingencies made to accommodate needs of participants and other stakeholders, so that the process of CALL introduction, familiarisation and implementation took place in a relatively straightforward way, from a social point of view. The constructs of Bax (2011), Van Lier (2004), Bijker (1997), and Lieshout, Egyedi and Bijker (2001) align with this study. In terms of the introduction of CALL into an environment I consider that a scaffolded, collaborative process as outlined in Bax (2011) and Van Lier (2004) would be effective in most environments. The complexity of this process should be taken into account and a 'needs audit' and 'learning plan' for each setting may help to mitigate some of the challenges.

Suggested role of external agents in curriculum innovation

Another finding in this case study was that it demonstrated that teachers, as learners, with appropriate scaffolding and encouragement could 'extend their reach' and envision new ways of teaching and learning with their students. I agree with Coleman's view that introducing new / foreign ways of teaching could

be just 'merely tinkering with the ritual' (Coleman, 1996, p. 80). However, I would suggest that perhaps scaffolding and a modelling process where the learning is co-constructed in a collaborative manner has something to offer as a mode of working. This study suggests that through co-construction of ideas and in discussion, teachers can explore, discover and implement for themselves new ideas and innovations, adapting them to their environment so that the ecology of the setting remains intact. This study adds support to Holliday's (1992) suggestion when he proposed that the role of the external educator may become one of "a supervisor of action research carried out by local lecturers with their own classes" (p.419).

Implications for stakeholders and managers - A wider view of the implementation of CALL

This study used Activity Theory as an exploratory framework to take into account the wider contextual factors that influence innovation in any setting and to understand how changes in one area or sector affect other areas of activity.

The use of the new tool FLAX gives rise to change as the subjects (teachers and students) become more proficient with tool use. As they become more proficient users of the tool they further develop the tools which then will change the way that the object, the learning of the English language, is operationalised. This change in the object may in turn assist the achievement of the outcome. Another potential change may be that subjects themselves are on an individual trajectory in relation to the tool use, as some will take up the challenge of the new tool more readily and capably than others. This may lead to a change in rules, new roles and responsibilities which may bring change and contradiction and changes to the division of labour, perhaps as some teachers are given more responsibility and/or leadership roles.

This view through the activity system framework suggests that introducing a new tool into the tool system brings changes and contradictions in the whole environment, and that this change is dynamic and involves all stakeholders in the system. These changes first need to be identified and then managed. A process that involves all stakeholders in the change process is recommended.

6.3.2   Suggested implications for researchers
Exploratory research - Identification of issues

This case study described the process of introducing a new technology to a site and has attempted to show this through the teachers' minds as they shared with their peers their thoughts about the innovation from the initial introductory phase through to implementation. It sought to understand their views, or at least the views that they are ready to share with others, so that the process of normalising this new technology into this setting may be better understood. These findings support the view that teachers are now starting to take a role in becoming the knowledge-makers in the field, a view put forward by Allwright (2006). He called this process exploratory research whereby practitioners become "people trying to reach locally helpful understandings" in their own settings (p.15).

The rate of change and development in technology and its impact on teaching and learning invites further research, so perhaps small scale exploratory research projects conducted by teacher-practitioners may be one of the ways to enhance their understanding of the sociotechnical impacts of technology and teaching and learning. Initially, it may be useful, or even necessary, for an external change agent to supply expertise to stimulate these projects.

Collaborative action research - Management of change and contradiction

Another possible extension for research is action research projects to resolve practical problems arising from a greater understanding of the pedagogical context. Two such projects were undertaken as part of the wider collaborative curriculum research project at the site in 2010. Many of the participants in my research joined with other teaching colleagues and investigated some matters of their own choosing. The results of these were subsequently integrated into the curriculum and presentations were made to colleagues at conference presentations. (See Chapter One).

Thus, as a result of my study, I can concur with Burns (1999) when she suggests that action research, and in particular collaborative rather than as an individual projects, has a number of personal and professional benefits for second language teachers. She recommends collaborative research as it encourages critical reflection about practice which may enhance personal and professional development. These project teams could engage the support of an external

educator if they wished, negotiating his or her role as part of the project design, implementation and/or evaluation. A benefit of this model is that everyone involved in collaborative research model is learning, and with such a high level of participation the chances should increase of changes being integrated into the setting. This study started with a consideration of how change can be successfully integrated into a setting without experiencing rejection, and perhaps this model of participatory investigation has much to recommend it.

6.3.3 Recommendations for further research

Bax (2011) suggests that further research could be carried out into the normalisation of CALL which focuses on the key contextual variables in the settings. I think that similar small scale research projects investigating normalisation of CALL into a context would be valuable to establish whether there are convergences or divergences from the findings in this study.

In regard to research methods I would suggest that further consideration be given to the effectiveness of oral reflective journalling as a research tool, particularly in settings where there is an oral tradition. It is important to continue to carry out qualitative research in a variety of settings, and in order to find suitable naturalistic methods that suit the participants I would recommend further exploration of multi-method approaches which may include oral reflective journals and research journals, as well as other more established methods. Alternatively researchers could combine some interactive aspects into the oral journalling process, with methods such as written dialogues, as suggested by Field and Burton (in press) which may allow for further probing of the research questions.

6.3.4 Personal statement

This research has achieved a personal goal in assisting me to understand more about the benefits of a sociocultural approach to curriculum change. I mentioned in Chapter One that the role of being a change agent was rather challenging in my time as a volunteer, and this study has verified that introducing change - and, even more, normalising it - is indeed a complex process. However, the application of Activity Theory it has shown me that some of the complexities of a setting can become explicated, and in this way managed. It has shown me that change can be

effected through sociocultural means using such familiar frameworks as scaffolding, modelling and other interactive modes that are familiar to most teachers and teacher educators. Approaching the setting again as a researcher, has created the distance necessary to be able to examine the impact of normalisation of a CALL innovation upon my peers and colleagues in this ethnographic case study. My academic journey has been both interesting and challenging, and I look forward to further collaboration and exploration with colleagues into other aspects of teaching and language learning.

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Appendix A: Sample FLAX task: Word Guessing Gap size

The Timor Pony

The Timor pony is a small, strong and hardy horse that has lived in Timor-Leste since before the first Portuguese traders arrived in 1515. Many people think that the pony had arrived as a result of the trading links used by Chinese, Indian, and Javanese traders.

The pony has a good nature, intelligence and commonsense. It can withstand hot [1]_____ and can live on [2]_____ and other available vegetation. The [3]_____ are usually brown, black or cream in colour.

Today [4]_____ are used for moving [5]_____ and equipment from area to area. In areas where [6]_____ are now well developed they are used less, but in many mountainous rural areas [7]_____ are used as the main [8]_____ of transport.

Ponies are used mainly for [9]_____ work, as well as for riding, driving, and light farm work. They have made a huge contribution to the economy especially in rural [10]_____.

In the 1800's some Timor ponies were exported to Australia arriving at Sydney Cove in 1803. In 1849 a large group arrived in the Northern Territory at Pt Essington. They were used for the [11]_____ of exploration as well as [12]_____ work, but many of the breed ran wild and found their way down the west coast of Australia.

The pony is also featured in Australian literature as the highly skilled horse ridden in a thrilling ride in the poem called "The Man from Snowy River."

And one was there, a stripling on a small and weedy beast; He was something like a racehorse undersized, With a touch of Timor pony - three [13] thoroughbred at least - and such as are by mountain [14] prized. He was hard & tough and wiry - just the sort that won't say die- There was courage in his quick impatient tread; And he bore the badge of gameness in his bright and fiery eye, And the proud and lofty carriage of his head."

The Timor pony is recognised around the world as a friendly, strong good natured horse but it's real home is still in the rural areas of Timor- Leste.

Appendix B: Sample FLAX task: Word Guessing Word Type

Word Guessing

find, find, get, have, need, practise, practise, practise, study, study, use

Using the internet to study English

| Audio (British English) ▼ |

Another way you can ⁶⬚ 💡 the net is to ⁷⬚ 💡 your listening. Some sites have listening quizzes. You listen to a story , and afterwards answer listening comprehension questions. One popular website for listening is www. esl-lab. com. It has stories from easy to difficult , and also listening for academic purposes. For this you will ⁸⬚ 💡 to download an audio programme and you will ⁹⬚ 💡 headphones. After taking the listening quiz , you can read the transcript and listen again. This site is a great self-study listening tool.

Not only is using the internet to study English useful , but it is also fun and an interactive way to study. Games , puzzles and songs are enjoyable ways to learn English too! So how can you ¹⁰⬚ 💡 started in using the internet as part of your self-study? First , choose

Appendix C: Sample FLAX task: Scrambled Sentences

Scrambled Sentences

Using the internet to study English

How do English study classroom outside the you ?

This is a question I often ask students .

- *Question No.:*
  - *1 out of 6*

Close window

Appendix D:Sample FLAX task: Predicting words and phrases

Predicting Words and Phrases

Using the internet to study English

How **do** you **study** English outside the **classroom**? This **is** a **question** I **oftenaskstudents**.

Most students use their school 's library and learning centre to study and practise. **Using** the to **study** English **is** another **valuableself-studytool**. There of **websites** for English **students**. These sites contain a variety of self-study exercises , such as grammar , vocabulary , listening , reading , and writing quizzes. They also have explanations of grammar points , various topics of interest , useful expressions , and provide an opportunity to chat to other English language students all over the world.

- *Type your prediction (words or phrases, letters only!)*

Appendix E: Screen of creating an exercise in FLAX

Create an exercise

Word Guessing

Exercise name: `Using the internet to study Engl`

Select a category: `none` ▼

Select documents

Difficulty level ❓

Level 4
Level 1
Level 3
Level 2

Number of documents to choose from

4

Activity parameters

▪ *Choose article* ❓

▪ `Using the internet to study English` ▼

▪ *Choose words based on* ❓

▪ ○ Gap size ◉ Word type

▪ *Gap size* ❓

▪ `10` ▼

Word type ❓

Verb (base form)
Verb (past tense)
Verb (gerund or present participle)
Verb (past participle)

▪ *Hint* ❓

▪ `Word list and first letter` ▼

▪ *Mode* ❓

▪ ◉ Individual ○ Group

Appendix F:Letter to Rector of UNTL asking permission to undertake the study

The Rector

Dr Benjamin de Araújo e Côrte-Real

Universidade Timor Lorosa'e

Dili

Timor-Leste

23 May 2009

Dear Sir

Greetings to you and your staff and colleagues at Universidade National Timor Lorosa'e.Even though it is now three years since I visited the university as a volunteer I still have many happy memories of that time.

The purpose of this letter is to outline some study I have just started through the University of Waikato towards an M Phil. I would like to ask for your consent to conduct some research at UNTL with the teachers in the English Department in particular, in about three months time.

I am hoping that my research will make a contribution to the Faculty of Education and Science and the English Department.

I would like to introduce a digital application for the university and its teachers to consider in regard to its usefulness and potential as a learning tool and as a resource.

This application has been developed at the University of Waikato and is designed to be used with text. It is suitable to be used in low tech digital environments but

will need some connectivity. The programme can develop learning activities with the text with teacher input.

The research would ask teachers about their views on the application and its suitability for use in the department.

This research is being self funded and will take about six weeks to complete. During this time I would like to respond to Dr Gutterres' invitation to come and assist the staff with professional development. I would be very happy to conduct workshops for teachers about the teaching of Reading and Writing or any other topic in your curriculum that the teachers would like to discuss.

I would like to arrive in Dili in late August and leave on the 9th October. I would liked to have come for a longer time but I am employed by English Language Partners Waikato who work with new migrants and my employing board have been kind enough to grant me leave to make this visit.

You are aware of the collaboration that is developing between the two universities. It was great to meet with Dr Guterres and host Mr. Marcos Amaral and Sister Esmeralda Araújo Piedade while they were here last year. You will also be aware that Dr James McLellan is coming next month to Dili to co-present a paper at the "Understanding Timor Leste" Conference in Dili with Mr Marcos Amaral. The research I am conducting is linked to our wider collaborative project but is part of my research for the MPhil.

I would be grateful to hear your thoughts about this research proposal and to answer any further queries you may have.

Yours sincerely

Mrs Jenny Field

Cc Dr Aurelio Guterres
    Mr Marcos Amaral

Appendix G:Letter to the Dean of the Faculty of Science and Education at UNTL asking for assistance from the English Department for this research

Department of General and Applied Linguistics
The University of Waikato
Private Bag 3105
Hamilton, New Zealand

Telephone +64-7-838 4466 ext. 6691
Facsimile + 64-7-856 2158

The University of Waikato
Te Whare Wānanga o Waikato

6 August 2009

Mr Marcos Amaral

Dean of Faculty

Dept of Science and Education

Universidade Nacional Timor Lorosa'e

Dear Marcos

I am enrolled in an MPhil programme in the Department of General and Applied Linguistics at the University of Waikato, New Zealand. I would like to inform you and the Head of the English department Mr Jorge that I am intending to come to UNTL in September. I have already written to the Rector and Dr Guterres asking for permission to carry out some research for an M Phil during my visit. I understand that I have verbal approval for the visit and I hope to formalise this as soon as I arrive.

I was so excited to hear that you have made some changes in the department and that the teaching and learning process is going well.

I was wondering if I could ask you and Mr Jorge to approach some teachers to be involved in my research.

As we discussed at length last year accessing suitable study references was a concern for teachers and students alike. You will remember the FLAX programme that you and Sr Esmeralda saw when you visited the U of Waikato last September. I would like an opportunity to introduce this to all the teaching staff, teach them how to make their own exercises and them gather their views about its usefulness to the university in terms of the teaching and learning processes.

It would assist me greatly if Mr Jorge could approach 4-6 teachers in the department who would be happy to participate in this research.

Process

1. Semi structured interviews in July after James has introduced FLAX
2. An interview in the last week of my visit with the same participants.
3. We will also ask the teachers to keep an oral reflective journal by answering some prepared questions in pair by speaking onto a tape. This would take place once a week for 4 weeks.

These two tasks will be the basis of my data collection. The teachers may decline to participate in both the group interview and the taped journal over four weeks. They may also decline to further participate at any point in the process.

All information gathered in my study will be kept confidential, and their and your privacy will be safeguarded, as only I and my supervisors will be able to access the data. It is possible that some of my findings may be published, or otherwise publicly disseminated, in the future. In this event, I can assure you that the teachers and your identity will be kept entirely confidential.

If you have any questions or would like further information, I shall be happy to discuss these with you, either by email ejfield2000@yahoo.com You may also wish to contact either of my supervisors: Dr James McLellan (mclellan@waikato.ac.nz) or Dr Roger Barnard (rbarnard@waikato.ac.nz).

I would like to take this opportunity to thank you in advance for your participation.

Yours sincerely

Jenny Field

Appendix H: Letter to participants at UNTL asking for their permission to undertake this research.

Department of General and
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The University of Waikato
Private Bag 3105
Hamilton, New Zealand

Telephone +64-7-838 4466
ext. 6691
Facsimile + 64-7-856 2158
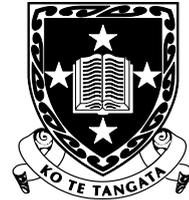
The
University
of Waikato
*Te Whare Wānanga
o Waikato*

6 August 2009

Dear

I am enrolled in an MPhil programme in the Department of General and Applied Linguistics at the University of Waikato, New Zealand. I would like to ask your permission to become a participant in my research, which I would like to carry out in the Faculty of Science and Education at the Universidade Nacional Timor Lorosa'e in Timor-Leste in September 2009.

I am conducting a case study to find out what participants views are about a digital application called FLAX as a useful resource for teachers and students in the English department. After the application has been introduced and after you have had a chance to use it, I would ask you to be involved in undertaking two tasks:

1. Two group interviews where you will be asked your views about FLAX. The first interview will take place shortly after the application has been introduced to you and the second will take place in the last week of my 6 week visit.

2. Keeping a journal for 4 weeks by speaking with a partner from the department about your views and experiences of using FLAX and your ideas about its

suitability as a teaching and learning resource. There will be some questions supplied to guide your reflections.

These two tasks will be the basis of my data collection for the research study I am undertaking. You may decline to participate in both the group interview and the taped journal over four weeks. If you should agree to participate you may choose during the interview to decline to answer any question, and indeed may cease to participate, with no need to give a reason.

Afterwards I will send you a summary of the discussion for you to confirm its accuracy and to add any further points you might like to make.

All information gathered in my study will be kept confidential, and your privacy will be safeguarded, as only I and my supervisors will be able to access the data. It is possible that some of my findings may be published, or otherwise publicly disseminated, in the future. In this event, I can assure you that your identity will be kept entirely confidential.

If you are willing to participate in my study, I would be very grateful if you could complete the form below.

If you have any questions or would like further information, I shall be happy to discuss these with you, either by email ejfield2000@yahoo.com You may also wish to contact either of my supervisors: Dr James McLellan (mclellan@waikato.ac.nz) or Dr Roger Barnard (rbarnard@waikato.ac.nz).

I would like to take this opportunity to thank you in advance for your participation.

Yours sincerely

Jenny Field

By signing this form, I certify that the research data collection process of Jenny Field's has been satisfactorily explained to me and that I consent to participate in by being interviewed. I understand that my rights to privacy and confidentiality are appropriately safeguarded, and that I may withdraw my participation at any time, and do not need to give any reason for so doing.

_____ (name)

_____ (date)

Appendix I: Outline of tasks for colleagues at University of Waikato to pilot Oral Reflective Journals as a method.

Pilot for data collection: Jenny Field (1)

Questions for Oral Reflective Journals

As part of my data collection at the site in Timor-Leste in September, I will ask participants to reflect on their experiences of using the FLAX digital libraries application that they were introduced to in July.

They will be given an empty cassette tape each week and a set of questions which are similar in type to the questions below. The questions are designed to encourage reflection on the process of implementation of FLAX, and in particular on their perceptions of its usefulness to the teaching and learning processes at the university.

The questions for this pilot will also ask for a reflective response on processes that you have been involved with during the course of your research.

Proposed participants: **V N, L M**

An audio and a video recorder will be present to record your discussion.

Your topic for discussion: **Human Research Ethics approval process**

In pairs ask and answer these questions together. You could answer them one by one or have a discussion together about each one.

- Describe the process you went through to obtain your HRE approval.
- What or who was helpful to you in the process?
- What difficulties did you encounter?
- What advice could you offer to colleagues who are embarking on their HRE process?
- Are their any further comments you would like to make about the HRE approval process?
-

Subsequent Journal Entries

(The subsequent journal entries are not part of this pilot study.)

Similar questions will be posed but they may be supplemented by further points that are contingent on the issues that arise from the previous week.

Appendix J: Letter to colleagues at University inviting them to pilot my data collection method – Oral Reflective Journals

Department of General and
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The University of Waikato
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Telephone +64-7-838 4466
ext. 6691
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**The
University
of Waikato**
*Te Whare Wānanga
o Waikato*

23 July 2009

Name

Faculty of Arts and Social Sciences

University of Waikato

Dear Participant

As your colleague in the PhD Research group in the Faculty of Arts and Social Sciences, I would like to ask you if you could participate in a small pilot of my data collection methods for the M Phil. I am undertaking.

 I am very much hoping that you would have some time to be a participant in a pilot of the approved data collection methods I will use when I visit my research site in September. The title of my research is "Investigating the use of digital applications as a teaching and learning resource: A case study from Timor-Leste."

The purpose of the small study is to trial the data collection methods and my findings will be reported to both you and my supervisors.

This data collection method captures the data by means of a reflective discussion by two participants who respond to some focused questions given to them prior to the discussion. There will be four recordings taken at the site but this pilot will require one session only. The person I am suggesting you have your discussion with is _____.

If you are able to take part, I would ask that you and _____ contact each other about a mutually acceptable time and date for you both to proceed with the discussion. You will need 45 minutes at the maximum. When you have decided on this please inform me, and I will book the meeting room for your discussion.

I intend to record the discussions on two kinds of recording devices; audio tape recordings and a static video recording. A summary of the main points of the recordings will be made available to you for you a week after the discussion.

Your confidentiality will be respected throughout this piloting study, and your identity and the members of the class will be kept entirely confidential.

If you are willing to participate in this pilot, I would be very grateful if you could complete the form below and then cut and paste it into an email message and send it to me at
jjf2@students.waikato.ac.nz

If you have any questions or would like further information, I shall be happy to discuss these with you, either by email or by phone (07 856 6518). You may also wish to contact either of my supervisors: Dr James McLellan (mclellan@waikato.ac.nz) or Dr Roger Barnard (rbarnard@waikato.ac.nz)

I would like to take this opportunity to thank you in advance for your participation.

Yours sincerely

Jenny Field

By signing this form, I certify that Jenny Field's pilot study has been satisfactorily explained to me and that I consent to participate in the pilot.

_____ (name)

_____ (date)

Appendix K:Data:Sample from Researcher's written reflective journal

14 September 2009

Today was one of my best days so far although it didn't seem spectacular at any given moment. I think the most satisfying thing was that the data collections are getting done and teachers seem keen to come to workshops.

Also got the manual tapes transferred reasonably successfully to digital recordings which is all great.

Curriculum work is also going well. See if we can see Ms this week.

Will talk to Ms about teaching the teachers and producing a seminar with them.

Tomorrow

Prepare the workshops
Go to lunch with M.
Take pressie for M's children.

Appendix L:Three FLAX workshops (worksheets for participants).

Workshop   One Jenny Field

10 September 2009

Instructions to open FLAX *To enter the Greenstone Digital Library:*

1. Start the Greenstone 3 server:

   Start → All Programmes → Greenstone-FLAX → Greenstone3 server

   A command prompt appears, and then a small window. After a short pause another command prompt opens up. At the end of the window the text "Server startup" appears, indicating that the Greenstone server is running.

2. Click the <**Enter Library**> button on the small window.

   A web browser opens up to show the FLAX activity page

3. **Language Activites** - the page opens up at the 4 activities in FLAX

   Word Guessing
   Predicting words and phrases
   Scrambled sentences
   Fill in blanks

4. Click   Library   This will open **The Best ofPassword** (Texts from New Zealand) and **UNTL** (texts with a Timor Leste context).

Password has 20 texts and UNTL has 20 texts
All the activities are based on these texts. To look at the titles and levels click UNTL   Browse   Level OneLook at the titles in Level One: Running out of words, The Shepherd and the Tiger, A Chicken Surprise, High Heels and The Fox and the Crow.

5. **Activities**

Try Scrambled Sentences   Level One and Level Two. Remember to **Check Answer** and **Next**
Use Close Window to start another activity.

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Try Fill in the Blanks   Password Demo Exercise

  6.How to make your own exercises: Look for **Create Exercises**
  Fill in blanks   Select 'Best of Password' Library   Collocation Verb + to +
verb.
No of sentences- 8 Word guessing 'UNTL Library' Select verb past tense
Block out any words you don't want to use.
At this point you can print the exercise if you need to.

FLAX Workshop   Two

17 – 19 September 09

From: Mrs Jenny Field

For: Teachers in the English Department

Review: Please review all the activities we did last week.

1. Open Flax: All programmes- Greenstone FLAX, Drop down file- Greenstone 3 Server. Enter library.
2. Find Libraries;   Password and UNTL. Click on UNTL.
3. Try Activities;   UNTL,Scrambled Sentences Level 3.

                   Password   Fill in Blanks   Demo Exercise

                   Password   Word Guessing Level 1

                 UNTL   Predicting The Shepherd and the Tiger, Read the story first. Go to browse and click The Shepherd and the Tiger.

Create your own exercises.

1.   Create a Word guessing exercise for Semester III and IV level.
 Library UNTL

Create an exercise If you wish to save it click on the two people icon. I will give you the password.

        Create an Exercise

- Exercise Name: Level 2 The Cristo Rei Statue
- Word guessing   The Christo Rei Statue   Level 2
- Difficulty level :   Level 2
- Choose document : The Christo Rei Statue
- Word Gap: 15
- Hint: First letter
  Preview, Display, Save.

2. UNTL Library
   - Word guessing   The Christo Rei Statue   Level 2
   - Difficulty level : Level 2

- Choose text   :   The Christo Rei Statue
- Word type: Plural nouns   (next time try mass or singular nouns)
- Hint: First letter
- Preview , Display, Save.

3. Homework: Now choose another document in Level 1 or 2 and make another exercise and save it.

Workshop 3 Participants in FLAX Research

Try these revision tasks by yourself or with your colleagues

Word Guessing

1.   Using **Word Type** to create a task

Try to make this task and save it on to the computer.

Word Guessing   The Fox and the Crow

Level 1

Word Type   Verb Past Tense and Verb Past participle

To make more than one option hold down Ctrl while you

highlight the other option.

Hint   First character

Preview and then save.

2. Make two other tasks and save onto your computer

Level 2   Dili Oecusse   Shipping link restored

Word type   Noun single

Hint   First character

3.   Level 3   Two Endangered birds in Timor Leste

 Word type   Verb/ base form

Past tense

Verb past participle

NOW YOU ARE READY TO INTRODUCE FLAX TO YOUR

STUDENTS!!

Appendix M: Sample of transcript from 1st collection of Oral Reflective Journals.

1st Journal Entry   1:1 and 1:2

- Describe what you have done with the FLAX application this week.
- What was interesting for you?
- What was difficult for you?
- What do you plan to do next week with FLAX?
- Are there any further comments you would like to make?

1:1   All right let us start with our discussions answering these questions about the technology Flax. Describe what we have done with the FLAX. Do you have opinion to describe it?

1:2   Ah.. we have done with the FLAX. OK It is the first time for us to do exercise with the FLAX So we have done some activities or exercises with the grammar and word guessing.

1:1   If me, I haven't done too much about Flax because the reason is sometimes I'm very busy ,so I don't have time to do much with FLAX. What I have done was the first times I got introductions from FLAX and then in this case… so operate my computer and then to know to identify what is the FLAX and then to know...to discover the sources to get the sources some sources that are related to the English that are related to some vocabularies …sentences then yeah... I saw it is very important.

1:2   Yes It is very important and high tech to learn English .. yeah it was very interesting

1:2 It will be the focus to exploring …everything to me…very interested Everything for me was interesting….and about the difficulties because one I need the difficulties are, try to explore many things… the difficulties… we are not ready for it yet this Flax maybe we need to get more training.. get more explanations .. and also some instructions… try to learn more from instructions.

1:1   OK   It's interesting if we enjoy the activities with the word guessing and this is good as a source for us to learn or to be familiar with the Flax .. as that's new for us

1:2   Yeah

1:1   It's new for us….The difficulty is we still poor of vocabulary so.. to guess the word to put the word in the right sentence ..with the right sentence..

1:2 As I discovered there are some difficult vocabularies, difficult sentences still unfamiliar for us and then for the teachers if we want to use this first of all we have to learn first because there are some difficulties If is is for us it is difficult .The vocabulary are still unfamiliar for us we have to learn For the students more difficult we have to try many times

1:1 We need to guess the word from other people's stories, so it's difficult to guess the new words and we still poor of vocabulary that's the problem ..

1:2 Also not only vocabulary Also grammar.

1:1   Grammar That's true

1:2   Grammar er have to learn more grammar. Grammar it contains many things Like second noun How to put …How to identify ah… to distinguish between noun and verb and adjective.

1:1   Verb and adjective …Also maybe with the password if we need password to go to the FLAX.. so how about if it doesn't work so so…also find some problems

1:2   Okay What about our comments for the future?

1:1   Maybe next week we need to explore more about the FLAX for next week and to find information more about the Flax to get with J, Mrs J, J F

1:2   I think so I think so …. Because it is difficult ..If we want to know more about this technology we need some guidelines, some instructions.. We need more from Mrs J to teach us more about FLAX. To use detail   How to use it perfectly. We need more guidelines about FLAX keep in touch with JF about this.

1:1   Ok because more but   …. reading ..because we got just first time so ..Reading Comprehension   Question and answer something like that

1:2   Some readings giving scientific readings and maybe..

1:1   Scientific Readings we need also. And also some recommendations. Reading comprehension was …Questions answer something like that some scientific reading we needed also explanation   multiple choice for word guessing

1:2 Yes yes
Maybe Multiple choice work guessing
Sometimes guessing is something the lucky one and reading
Most people they make guesses …it's quite hard to the best way

1:1 So it will help us improve our vocabulary
1:2 Thank you very much

Appendix N: Sample of transcript from 2nd collection of Oral Reflective Journals. (Any highlighting is from subsequent coding of data).

Sept 29 2009, Week 3 2nd journal collection

Translated verbatim into English from Tetum.

2: 5   Good morning Mr. S

2:8   Today, we have a new programme, some questionnaires are here, researcher would like you to give your opinion on what they have conducted, and I think this is very important. We have not had it in our university at this moment. Flax is a good programme. Describe what you have attended last week according to your opinion.

2:5   Thank you Mr. S, firstly, I would like to state that Flax is a very interesting programme because it is a new programme. It is a continuation programme with the aim to remind us as a lecturer and teacher on how to design the learning material or prepare our material for teaching.
Flax programme encourages us to learn better and quicker. Moreover, it also helps us assisting student in learning process, especially in English Department.

2.8   That is your opinion; to me it enhances my knowledge because my major is in TESOL methodology. Flax has given me another material. So, last week, I have learned learning level such as word guessing/missing and word type. From that, we can decide which level we are interested at, then we can save, print and give it to our student. So, this is a very good programme. We

do not need to go to library due to limited resources. We can use this programme to teach.

2:5   I would like to underpin that there are always changes continually in flax programme that we have participated for 3 or 4 times. There is always different design of material that we have learned. Therefore, Flax is very important for us on how to design material to teach. For instance, what we have learned this week: word formation, noun single, verb and form. The way we fill the format can clearly help us in order to know noun and verb.

2:8   We can teach our student by using this programme.

2:5   So, we can prepare ourselves to teach without any difficulty. I think this programme is very interesting.

2:8   Now, the 2nd question from researcher is what was interesting for you?

2:5   This week is very interesting to us because firstly as a lecture I have obtained a new knowledge and methodology that reinforce my capacity. Moreover, it also strength my current experience. We gained another experience through this programme, which is called flax. I though this is a very interesting programme because it helps us as the lecture, especially on how to teach the student.

2:8   This is very interesting because we can learn quicker and simpler. Those are what make us more interested.

2:5   Is there any difficulty for you in participating flax programme?

2:8   Nothing was difficult for me; the main concern is we have not familiar with this programme. In the future, I think there will be

no problem if we keep exercising with the student. It can become a culture for us.

2:5   I think the difficulty is flax is a new programme for us. Precisely, if something new, we always face the difficulty. However, for the period of participation in this programme, we realize that this programme is not very difficult; it will be no trouble for us.
Another thing, we know that if we use flax, we also have to use technology, for example computer. It is difficult for us to facilitate it to our student as we do not have enough computers in English Department. I though it is a slight difficulty for us to implement this programme, especially for the student. We need computers to implement this programme. Computers help us to implement this method. So, its slight difficulty but I suppose that university can help us.

2:8   That is our condition.

2:8   Do you feel ready to English class with your student?

2:5   Technically, we are ready; we can use it to teach the students. I would like to refer to the difficulty I mentioned before because this is a technology method. I think we are ready to implement to the student. I think we can use it next semester. Even though there is the difficulty, we have to afford ourselves to find the way in order to realize this method.
To me, we knew it already, if we knew it why we do not use it? Next semester stars January and I will use it when I am teaching writing, reading and grammar. For instance, we can teach grammar to our student with the level 1-verb past tense, verb participle. Moreover, this method can be combined with the method that we are currently used. I think there is no problem

because it has word type and tenses. We can encourage student to do it.

2:5   The last question in English language, can you give example of how you use the flax application with your students?

2:8   As I mentioned before, for example, if I want to use word guessing what level should I use. I choose level 1 then I go to word type, then I can decide the title, level 1, for example I choose simple present tense.

Present the title to student, encourage student to keep practice/ to be independent/ self learning. If student do not understand, I can help student by giving the clue. We are like the guider. In general, I think we can use it.

2:5   To me, next semester which stars January, I will use it listening because filling blank is slight similar to word guessing but the method is quite different. So, I will use it in listening. This can reinforce the method that we are currently used, for instance, grammar, tenses such as simple present tense and past tense. We can also use it in reading.

I think this the last comment on flax programme which was introduced by an intellectual person from New Zealand, who conducted her researcher for doctoral candidate.

This is the last one for our discussion referring to flax programme. We are very interested with this programme, this research conducted by Madam J, she is from New Zealand. I think those programmes which she has given to us, we are very proud with her research, maybe before the end I would like Mr. S. to comment in English.

2:8   The conclusion is we are ready to use this flax programme. It is to help us in teaching student. So, this programme is very new

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in this campus. As you know, Timor-Leste is a new country and still lack of resources. So, this is the new resources for us and it is very good for us to apply in our teaching, I think that is all. Thank you Mrs. J for this programme.

Appendix O: Sample of transcript from 3rd collection of Oral Reflective Journals. (Any highlighting is from subsequent coding of data).

In pairs ask and answer these questions together. You could answer them one by one or have a **discussion together about each one.**

- Describe what you have done with the FLAX application this week.
- What was interesting for you?
- What was difficult for you?
- Are you confident that you can use FLAX with your students?
- Can you give examples of how you would use the FLAX application with your students?

3:2   Yeah in this opportunity we would like to express our feeling our experience of how we have done with the new technology is FLAX and then we are going to describe what we feel about this, and… first I need Mrs Fto explain: What have you done with the Flax application this weeks?

3:1   Ahh ahhh.. We simply we have done I have done a FLAX application with the stories.. stories and then how we create an exercise and save and then put in the file that we want to print for the students to do the exercises.

3:2   Yeah. The interesting one is Flax show us easy to create the exercise the form that we want to create for example. If we want to use it for students it is easy for studentsand it is interesting because there are many things provided by Flax for example like the key answers, the key answers and it is important too because we can explore many things, many words many new vocabularies, unfamiliar words from it. That's interesting.

3:1   Interesting for the story and then the exercise and then the key answers
        The new vocabularies that we can learn from the stories.

3:2   Actually nothing was difficult with the Flax. The Flax can be said it is
        easy for us if we want to practice it frequently it might be easy for us.

3:1   Like if we start with the Level , level Two if we have experience to access
        to the Level One until   Four or something Five maybe more … so if we
        get used to we have learned a lot of vocabulary and easy to do the
        exercise

3:2   Yes perhaps now we are ready to use the FLAX to access material sources
        to the FLAX in order to teach our students. Perhaps now we are ready to
        explore the FLAX.

3:1   If we rely on the FLAX, sometimes we depend on the answer from the
        FLAX, it is very good for us. We are ready because we have learned how
        to use the FLAX. We are ready to use this for the students

3:2   I think so. Finally FLAX is useful for us especially for the teachers.

3:1   Yes for the teachers ….to guide the students to learn English through the
FLAX

3:2   Flax is great technology it is helpful.

3:1   Technology for us to access. Yeah It will be useful

3:2   What will happen with the Flax say for example. If there is a future
FLAX for us
        to train more or only this FLAX and we can access for everything.

3:1   Yeah I think what they explained is maybe we need to create our own stories and then make the exercises.

3:2   Yeah yeah   I do hope that if it is possible we can create our own stories inside especially the real things that related to our environment or our country.. this will be great.

3:1   And the students may be . We can guide the students to make their own stories
        I think that's all.

3:2   Thank you for J.

3:1   We have learned may things from J. So if we have some questions of course we can get in touch with J. Thank you again.

Appendix P: Data: Focus group (b) in Week One.

(b) Focus group Week one   16 minutes

Jenny (J) Partipants (2), (1), (6) and (9)

J.   So thank you very much all for coming here today. I have a few
        questions ask
you. So perhaps first, **what are your first impressions?** You've seen the
FLAX demonstrated some of you when Mr James came but not all were
there. Were you there A?

FG1:6. No

J.   So these really are first impressions. So I want to ask you your first
impressions of the programme. So who would like to start?.............It's
always hard being the first person isn't it?

FG1:1 When James was here he showed us the power point so it was very
interesting to learn English through this technology. I think this is a
helpful resource for our students especially you know university students.
At the end of the semester they can learn more English and improve
vocabulary, yeah they can learn more the right sentence, the right verbs
and the words.

J.That would probably be my idea to have it available say in the Reading
Room. If you have your two computers there with it set up. Students going
and using it by themselves would be really good. Thank you. Any body
else first impressions?

FG1:1 Basically I have the some impression with Ms F. because when James was here he introduced us how to use this new technology especially related to the teaching and learning English to increase vocabulary and everything.. the grammar.   This is the new technology introduced firstly to the UNTL teachers and students. This is great and we are very proud to get this to learn this technology .Ummm.. I think this is the first thing for us because we didn't learn it maximum because of our business and then we didn't focus, but now on we try to focus how to learn it deeply.

J. Ok Ok Ok thank you

FG1:9 For me this is the first time when I saw this in the computer.

J. Today so this is your first time

FG1:9 When I… Also its good. generally its good. Specially for vocab it's good   especially for the students vocabulary. Also as J mentioned before this is maybe high technology . This university already has a lot of computers High technology and for students it will be …...   very easy. Yeah ummm if we have lots of computers its working but if only have few computers I think it is a problem. If the teacher can print out some and then use this for the students.Print out some and use this information. It language especially for vocabulary. Also as it will be very um … we have lots of computers working if can print out some

J.   Yes that is a benefit .You can print it out and make you own exercises around it.

FLAX F is Flexible L is for L language acquisition. I don't know what the X is.   Acquisition must be the X. but its Flexible Language Acquisition.

FG1:2   Recently I saw it in Bali in one complex. It is about a FLAX area but I didn't know what it was. I know better now what is it.

J. Flax is one of our indigenous plants.

FG:1:2 Yes I know better now.

FG1:1 What about the X

J. I think it's Acquisition.   6. What are your first impressions?

FG1:6 First time for me too. To see this. It seems like … It's a bit scary
thing Ummm ..It is very useful for both students and and teachers yeah
for the teaching and learning process. But I think the important thing is
that we should learn first before teaching.

J.   You're right , absolutely

J. Yes that is what I would like you to do. Somehow get that on computers
we have had success and failure on getting it installed. It's successfully on
some computers and unsuccessfully on others. So hopefully I 'll give you
instructions and you can try it. And that's what Id like you to do in the net
three of four weeks. Just practice and find out what it does.

FG1:2   Is it necessary to teach all the students to use this FLAX ?

J. Well I think that's your decision really. It's really for the teachers to
decide how they can best use it. I'm presenting it to you. I can certainly
see it is useful in the Reading Room

FG1:2 I propose it is only better if the students use it as a source.

J. There's all those nice texts you can use

FG1:2   If they discover it first. It is useless for the teachers.

J. It's your decision. A source text you can use for Reading , for Writing Vocabulary and this has integrated all of them. So I want to focus on the benefits you can see and then the problems. So the benefits, what are some of the benefits you can see of the programme.

FG1:1 Ok, I like guessing words. It's good. Vocabulary also like filling the blanks. Choose the right words and grammar if like, not basic but advanced one.. you can organise the sentences.

J. Hmmm Hmmm great. So that's all of those skills. Cool… any other benefits that you,ve thought of?

Pause……

J. You can think more about the benefits. You have mentioned already some in your first impressions. **What about problems? Can you see any problems?**

FG1:6The problem is for those that do not know how to operate confidently. Sometimes they don't knew which..the fashion of instruction of some of the signs
For instance some of the students is not.. The instruction can do something but really still have still have the limitation. That's the students limitations.

FG1:2 And also another problem is about the password because I tried many. The password is OK but I tried to find more and it requested password. And I used the same password like Admin.. and it was invalid.

J.…And it didn't work? It's the only one we've got so ….

FG1:2 We need to discover more

J. Certainly there are always some little challenges. The problem of installing has been a problem.   It installed wonderfully on this old computer but on your beautiful computer …

 FG1:1 How about the Reading Room has it got one/ it installed on the one close to the window.

 J. We had problems on the one close to the window. But not on the other one.

 FG1:1 Maybe some problem with the computer. Maybe it's not matching

FG1:9 You can ask IT person.

J. I definitely want to meet your ID person. I'm always coming from the learning point of view. I'm interested in the students and understanding the teaching and learning side and not so much the IT side.
I'm just waiting for the computer. You can ask the IT person. I want to meet your IT person.

 J. So my last question is. If all the problems were out of the way OK so we can see the benefits, lets assume that everything is running well, it installs on all the computers and all the students can access them and the teachers are using it well. **What do you think are going to be the benefits for your students for the teaching and learning process?** Do you think digital technology will help their learning…the learning and teaching process and why do you think that?

 FG1:9 It's helpful to the students because when they find out the new ways how to learn… it can improve their interest and it can improve their language.

 J. It's quite immediate isn't it? . We have this We are thinking of the future. In the future there may be

FG1:9   If we have this because we are thinking of the future In the future we will have technology we prepare the students for the future. All the computers to prepare ourselves to face the future. In the future there will be all the learning equipment will be on computers and we prepare ourselves. And also we prepare ourselves to face the future.

J. You'll be right up with other South East Asian universities who are using this sort

of things. It is quite modern

FG1:2 We certainly want to prepare our students. The benefit the student if we I

introduce the students the students will be familiar take an example it will be related   to the IELTS. In some university in Australia they have IELTS tests through the computer

J. Yes so you have to get used to that. And TOEFL Is it on the computer now?

Well it's coming believe me.That's a really good point thank you   2 . Any thing else about the teaching and learning process? Its early days yet ..you'll want to do some more thinking and playing

FG1:1   For the English department its very useful for the teachers

J. As a source

FG1:1 While the teachers explored this source it means it will also be benefit for the students. The teachers will use various kinds of sources. It's better for the teachers to be familiar with it first.

FG1:9 Its better for the teachers to master this and then later on introduce to the students.

FG1:1   Introduce to the students.

J. So we will just leave it and you can introduce it later. You can introduce it. There are 40 pieces of text that you can use and adapt.

FG1:9   I don't know I haven't shown any yet because…

FG1:1   Many of the students already know about this in the mini Reading Room. Most of them are curious to know everything. A lot of students are coming and we only have limited resource. We also can learn more and we can create new stories. A lot of students are coming and we only have limited resource
We also can learn more and think about we can create some new stories
They will be interested and we can guide the students also

J.   Good point.   6, Have you got any other ideas?

FG1:6   This is a teaching aide to teach the students' vocabularies.

J.   Good

FG1:6   Yeah What we have been teaching here is the old teaching aides so this is new one

J. It's bringing it up to date. Not that your old ones were wrong but you are just adding some new stuff.

J. This has been very helpful to me. You've brought another different point of view from the group I had the other day.

Appendix Q:Data: Focus group in Week Six.

Week Six   Final focus group

J. I can involve myself in the discussion this time as well. Once again Thanks again for your participation. The next thing is of course to try it with the students. Now you've learned how to do…..Someone comes in… Good afternoon. Now you've learned everything. How to make your own ones…um   I think I would like to get some more data after one semester? Is that alright? After one semester. What I'd like to do is I'll leave you with two of these and some tapes and some questions and after you have had a practicejust get together in your pairs, I'll give you some more questions for after you have used it with the students and I'll be really interested in what your thoughts after for after that .We can't do that now.

FG6:3   How can we send?

J Yes good question. I can either pay many thousands of dollars to come and collect them or…. We will just have to rely on someone coming to NZ. I don't know I just hope some of you will come to New Zealand.

FG6: 3   Maybe someone will go there.

J.   A couple of you will come. Some Timorese are there. There are students going backwards and forwards

FG6:3   We will be active after New Year

J.You start in January? When will the new semester start

FG6:3   The new semester will start in the middle of February.

J And will finish in. … July?

FG6:3   Maybe Mr R will come

FG6:1   Yes, R is coming next year.

J   No. It has to be after the students come back

FG6:3   I really would like us after the students have tried it with the students We will be really really busy and then we will forget everything

J I will I will …I will keep in touch and remind you. Because the whole project is you learning how to do it …..then implementation period with your students

While Jenny turns on the video some of the teachers talk together in Tetun

Noise of video starting to record.

Jenny Ok, shall we start on the questions so ummmm anybody can talk what ever you would like to do…..So we'll start on the questions. Any body can talk.

Can you just tell me about a task that you think you can remember that you will use with your students? Just tell about one task that you thought you ahh that was good . I will be able to use with your students.Who would like to start ?

FG6:1   This is my idea for first and second semester we will start.   Grammar and then story telling.

J.   I remember you said that you liked the idea of using it as a resource so every week you've got a new story to introduce and then you'll use it with Writing 1 or Writing 3

J. So it's writing 1 and 3 coming up. It's perfect for writing

FG6:5   For me I .. I use for Listening. Fill in the Blanks We have done the same then I teach listening. Fill in the Blanks

J Fill in the Blanks. You could read the story and then give them the Fill in the Blanks and then you can create your own.

FG6:5   Yeah

J   Don't forget .I've just made a library I have put all the stories in here. So instead of looking in the computer each time. You can just come and find the story Yeah I want that story and away you go…..Don't forget to use these I tried to put a new cover but it didn't work.

Je Thank you 5. What about you 4 do you think you will use with your students?

FG6:4   For me it's useful for writing and yeah useful for writing and then learning grammar and vocabulary too. Because that's why the students do not know about the new words. They have to learn words by words and then how to fulfil their empty spaces etc

J That's right.

FG6:4   The second one …the writing I mean that ..After they memorize their new vocabularies, they have to use their new words that they have prepared or they have learned. They transfer to their writing include with the speaking too automatically they have learned the vocabulary and use in their daily speaking. They have to use their new words and they transfer to the new writing in daily speaking

J. You could use the fill in blanks with the new vocabulary.

FG6:4   And grammar.. we know that when we give scrambled sentence and unorganized sentences give them and then finally they are going to rearrange the sentences. So this is my idea about …

J . Yes you can do all that and scramble them up. Yeah.

Word order is so important Mind you I think it's better on the screen if you can. You haven't got quite enough screens yet have you but it seems to me like it's really good to do on screen if you can.

FG6:3   Ok thank you. For me I think its very good to teach grammar and vocabulary but the problem is I'm teaching English so the type of … points to the blue manual ..the types of…. How can I say?

J The texts The researcher misunderstood the question (She should have said tasks)

Yeah there are four types there

FG6:3   I teaching reading the best one is Word guessing they read the story and then ask them close .. and then ask them to guess the word and is their memory is still strong and use their memory like the original one still strong to bring back to So it's like revisiting the new vocabulary and use …Use their memories. It can be in a group or can be individually If there are many . Or one or five or four they can do it individually.

J. I'm going to be so interested to see, you know, how it really worked out in reality.So the next question is **What do you see is the benefits for teachers with FLAX?**

For yourselves what benefits can you see for teachers with the FLAX programme?

FG6:5 I think the FLAX programme it is very useful for teachers. One is … easy to organize us let us to prepare ourselves before we are going to teach the students. This is the benefit for the teachers.

J. Its cuts down the time you know… teachers are always busy. So if you take that time to organize on the screen first hopefully it will save you time.Any other ideas about teachers?

FG6:1   How to make tests We can just create the tests and questions through the FLAX and any time we want to read for the students and any time we want to make a new test

J. Absolutely. I'm going to leave a little ink with you….

FG6:3   For me I think the reading is already in the computer, and it's well organized , so no need to need to waste the time. Once we want a print out it's depends on the level. Because it's already well organized. I just click level One and Level two, Three Three and Four Four. Its been very well organized . the organization is helping you because it been pre organized . I don't need to waste my time If I just close my eyes and click it and then   ….

Laughter
Jenny I'm really pleased to see…..

FG6:1 …And easy to mark because there is also key answers already…

J.   And the key answers are there….   laughter

J. You probably don't need them mind you, but they are there.What about you 4?

FG6:4   For me this FLAX is the main exercises in order to do the new exercises in related the way that FLAX has prepared it.   The second one its very easy because we have to know what the level of the students that we're going to teach. For example this FLAX is suitable with the low level students, some of them the high level students for example for low level I have to rearrange another exercise for them.
For example I see here some of the exercise especially for the high level I have to print it out it and I can give it to them to do the exercise.It also help me in order to do many different exercises for the students especially in grammar, in vocabulary and inside also there are reading texts. I'm going to improve.. to find out another new reading text for the students. So that my ….'

J   It's all pre programmed.**What are the benefits for students?**

FG6:1   As I mentioned before ..as a source…. new material To help with their English they also get help for exercises. If they have spare time with FLAX.

J   There's quite a range. Don't forget you've got the New Zealand stories too. So you've got 20 stories from the library and 20 others too.

FG6:1   And Timorese stories too. We also have East Timorese stories that are familiar

J   It might encourage them to tell more stories. Yeah yeah that's great.

FG6:3   From me I think the benefit or advantage for the English students This programme will help the students to learn with fun. And like what I said before. Reading to bring back their memory. After reading they need to guess the word This is the first time its happened in this university because it seems like play a game… but it is useful.

J. That's right playing a game it's OK

FG6:3   People they like to play a game but in fact they're learning. People they like to play game and they want to sit on the computer and they want to play a game. But in fact it's the material its like a lesson but its like a game. Two to three sitting together but in fact that's the material they are learning.

J. Ok Well now we come to the Problems. **Can you identity any potential problems you're going to have and then perhaps suggest ways you might overcome those.**

FG6:5   When we implement we will face the problems. The new people should learn new things Second is because we learn through the technology we should

use the computer.Here we have many limitations of computers. Many students can learn…. We try to find another way to help the students even we don't have computers. We try in another way to help particularly for myself ..I will use for Listening. This subject I handle it…

FG6:1   Ok As a source but maybe the problem .. if we provide the text the students they can get the answer from the FLAX, they also get the answer already.

J.   That's right I'd thought of that

FG6:1 They already got the answer Through the FLAX we have to be careful otherwise the answer doesn't fit the questions.

J.   I think the fact that you're the ones that are creating them. And you can create and you have the password you still have a slight advantage. I've put a few tasks on that computer there;s a bank of quite a few tasks for you to go on with. Ummmm

FG6:1 Keep the password secret Difficult

FG6:3   Mentioned by Mr F. Limitation of computers and many computers and only 2 computers. 901 students to use the computers in the reading Room and some lecturers and only 2 computers, 901 students some lectures they don't' have computers.
I have my own laptop and for myself it didn't work and also Mrs F.

FG6:1 Only Sancho got it.

J. There were two or three that didn't load. In the Reading Room only one the problem if they all installed they all accept the that would probably be helpful.Maybe some of the students…

FG6:1 Yes, if they all accept it will be helpful.

J.   Keep trying

Jo If I later buy a new one This will be a suggestion.

FG6:4   Well the problem is the same as Mr J said and Mr Ssaid, but it doesn't mean that we stay in the problem.

J.   Thank you

Fg6:4   No, through this ask the head of the university in order to do proposal for the government to ask other NGO in order to get this because we don't want to stay with this condition. So this very important to open our idea in order to get..

J.   I gave a CD to the Director at the Ministry.

FG6:3   It is a good suggestion from Mr N but it's too high.We're are still in suggestions

FG6:1   The FLAX suggestions Same password or new password.With the students password the password is the same. There is only one password
They do this in the computer science lab but we don't want the students to be creating their own. They just use what's inside. They shouldn't be be creating their own. They shouldn't be creating their own. The teachers should be creating That's your prerogative. They won't be creating their own. That's for you.

FG6:3   To overcome this problem related to the FLAX . Like my own computer that didn't work. I will buy a new one I already have the disk. To over come this problem probably I will buy a new one You already gave us the disk So I can install it.
It later on next year. If we recommend to the government to provide some new computers.Another students. Some students have their own laptops so I will suggest them to bring it here and I will install it gratis.

FG6:3 Another one. Probably We will print out something deliver to them. We will collect some 5c for a meeting.

J.   I'm going to leave you enough for a couple of cartridges. Just black and white so you can keep going.

FG6:1   One more is about multiple choice. Multiple choice.This is the last one which is changes in development.We will look and see if we can get a multiple choice option. Mult choice is really popular in Timor. It makes the students think

J. Where do you see this idea going from here?You've got some texts and some ideas. How do we get more stories Where do we go from here? What's the next step?
After a while the students will say Ive read that 10 times. I'm ready for another one.
How do you see producing some new texts.

FG6:5   I think for me I will use a reference from listening book, but if I use this story already I have to use stories from other books. We can organize the students to share with each other They create their own stories and share with each other.

FG6:1 They can create the story and share with another.This is a nice story written by a scholarship students

J. Maybe you could have a story competition. JG was saying he was thinking about a story competition. "Morning dew" you used to have that didn't you?Keep thinking how to get some more stories I mean at this stage the next one I want to do is the   Tour de Timor. The bicycle race If you think you have a nice story just email to me and I'll put it in. and make another CD. I see this as the start. We can go on. It's unlimited really the potential…

Any other changes you would like to see?

So we've got multiple choice

What about the image one where you have two pictures. Images Do you think that would be helpful. You have to compare ….

FG6:4 Matching?

J. Yeah, like matching
Do you think that would be helpful?

FG6:4   Yes definitely

J. Any other changes or things that you want to share. You've been fantastic with all your ideas. I'm going to go home with lots of data.

FG6:1 If you are already you can help us to create your own ideas.
Next year you can help us create …

J. It is hard for me to find good stories about Timor in New Zealand. It was quite difficult. I had to really search If I encourage you to write create stories to create their own stories I think they would be even better quality.

FG6:4 For me, I think the university will organize the students in order to write their reading text by themselves. One competition   the students will do and the reading tests especially for example every student from different districts and then they are familiar with the districts .. beautiful the beauty of their place in districts etc. they want to do that the university will just checking and the mistakes they have done. They will be the texts.

J. That's what I would really like to happen. It's coming from you.

FG6:4   The second one Right now Mrs Jenny's here . Right now has cooperation the university has cooperation so maybe the university has to ask any help through the U of Waikato for example give something. So that's one way.

FG6:3 Actually Mr Norberto say something fantastic but its too high. We are a big university with many students. We are only limited English Department 901 students. We not able to control them all they come with various backgrounds like the lecturers that now sent out for study abroad .. once they come back from abroad once they come back with different knowledge, we are very teach 8 classes and dealing with Administration . No kidding at all. I can't sleep well at night

J. What do you think about producing FLAX in Portuguese?
It is in Spanish, Chinese. English French and what's the other one. Can't remember.
Do you think there would be a benefit because as I say…I'm not the person who does
I'm sure we could find a person in Hamilton who spoke really good Portuguese
This…

FG6:3   Why not? It's good.. very helpful

J It may give more credit in the university. Would you like me to go to Waikato and talk to the university about that?

FG6:3   It's good . Not only future source. Because they also also use Portuguese.

J. I'll follow that up that might be another development. This is the finish now of my data gathering until you've tried it out with your students.. I'll perhaps send you an email. I was very impressed to see… you went off and did your own things. If you can do one more piece of data collection for me.

FG6:1 Now we've used it with the students and this is what happened.We collect from the students. Everyone now just become the sample.

J. I'm just looking to get ways to get more texts really, and I certainly don't expect you busy teachers to do it all. Thank you very much.