

The Girl on the Bus or the Spider in the Bathroom? Students' enduring memories of learning experiences outside the classroom in technology education

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Abstract

This paper explores the planning and management of Education Outside the Classroom (EOTC) as it relates to curriculum-based learning and teaching in schools and in this instance specifically to teaching technology education in the primary and secondary classroom. These types of experience away from the four walls of the classroom often evoke very strong memories for all of us, but frequently it is of the social context rather than the intent of the learning experience. This paper looks at Falk and Dierking's (2000) Contextual Model of Learning and how consideration of the four overlapping contexts of this planning model, can enhance the quality of student experiences and their learning opportunities. It will look at examples of long-term achievement and retention of student learning, the impact of an experience on student learning, and the characteristics of a successful EOTC experience.

Introduction

Taking students on a learning experience away from the four walls of the classroom may conjure up an alarming image of forms to be filled, permissions to be gained and sometimes, an overly zealous expectation from school management to manage the facility that is being visited. A recent story from an irate teacher who was planning to take a group of students to an animal park in the next town, described a request from the EOTC supervisor at his school to explain how he would manage his students if a lion escaped from its enclosure. The nature of his (light-hearted) response referred to the practice of the Ancient Romans who would offer the sacrifice of one of their party to appease the Gods, and then make a rapid escape (C. Milne, personal communication, August 17, 2017). Joking aside, it seems that there are high levels of frustration in-amongst teachers who are time poor but enthusiastic about the advantages of taking their students out of the classroom for experiences which they cannot replicate in the classroom.

This paper is not about setting up a School Safety Management System, planning EOTC Event Procedures or considering the safe behaviour of students during a visit. This paper illustrates why we *should* go to the trouble of providing opportunities for students to experience first-hand, engaging, and relevant experiences away from the classroom that students are likely to remember for a life time.

Education outside the classroom is fundamentally good (Milne, 2015) and as a child growing up in New Zealand the ‘school trip’ evokes strong memories for many of us. Regardless of how many years have passed since an event occurred, most readers will remember, with some clarity, a day when they boarded a chartered bus and set off through the school gates on a class excursion. The enduring memories of these experiences tend in most cases to be of the social dimensions of the visit, with only tenuous links to the intended learning of the day. This is the focus of this paper – what do we know about students’ long-term memories of experiences outside the classroom and how can we promote improved recall of the educational learning goals of teacher planning?

What is EOTC and LEOTC?

The Ministry of Education has committed extensive research, funding and resources for education outside the classroom in order to better inform and complement the wide range of opportunities provided by schools. This began in June 2004 with a research project that investigated the effectiveness of programmes for curriculum based learning experiences outside the classroom (Moreland, McGee, Jones, Milne, Donaghy & Miller, 2005). More recently, the Ministry has updated *Bringing the Curriculum Alive - EOTC Guidelines for schools* (Ministry of Education, 2016) which provides information and resources promoting the value and purpose of EOTC, safe practices during an EOTC experience, planning, and the legal responsibilities of the school.

There are a number of terms, used internationally, that describe this type of learning, usually under the umbrella of informal learning. EOTC in the New Zealand curriculum describes curriculum-based learning and teaching that occurs outside the classroom. LEOTC or Learning Experiences Outside the Classroom, is a Ministry of Education contestable fund for providers who can demonstrate support for the New Zealand curriculum. Currently this includes sites such as Zealandia in Wellington (Karori Sanctuary Trust, n.d.), the Rotorua Museum of Art and History (<http://www.rotorua-museum.co.nz/>), the Waitomo Glow-worm caves (<http://www.waitomo.com>) and Dance Aotearoa New Zealand (Dance Aotearoa New Zealand, n.d.) These and other sites may apply for funding from the Ministry of Education every three years and the key factor in their role as LEOTC provider is to provide services that have the potential to benefit all students enrolled in New Zealand schools. It is expected that these sites will provide links between classroom studies and real world experiences, with a learning focus that include hands-on, interactive tasks, under-pinned by the experiential model of learning. Excursions that are substantively for the purpose of recreation or entertainment, are usually precluded from the EOTC and the LEOTC categories, although as this paper will attest, fun and enjoyment are valuable elements of these experiences.

'Enduring memories' and supporting literature

Interestingly, most of us have excellent recall of the school visits that we experienced as children and can remember where, and with whom, we went, and at least three aspects of what occurred during the visit (Falk & Dierking, 1997; Rennie & Johnston, 2004). If these levels of recall are possible within the social context of a visit, how can we replicate this when planning curriculum based learning for school-aged students?

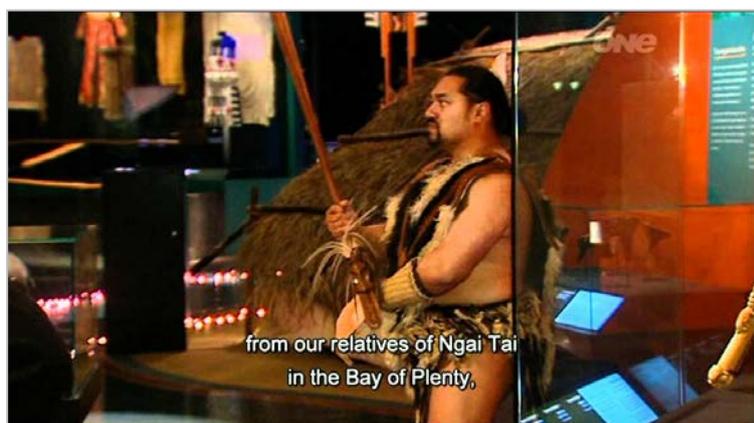


Figure 1: Display from the Tainui exhibition at Te Papa

As outlined in the work of Falk and Balling (2001), the most valuable and memorable learning experiences outside the classroom are ‘novel’ experiences – those which are new, and of high interest to the students. In comparison, multiple visits to one site can result in the detail of the visit becoming blurred, and the specifics of any single visit tending to be lost over time. Visiting Te Papa⁵, for example, to view a short-term exhibition on the origins of the Tainui⁶ people, may offer far greater visitor focus than frequent holiday visits wandering through the same long-term exhibitions year after year (see Figure 1). Research suggests that a one-off, focused visit has the potential to offer students an enhanced and memorable learning opportunity (Falk and Balling, 2001).

Anderson (2003) argues that this type of memory is also “overwhelmingly dominated and mediated by the socio-cultural identity of the individual at the time of the visit” (p. 405) and the lens through which the experience is viewed, strongly influences what is noticed and what is remembered. Furthermore, these memories are influenced by the age of the students, what is important to them and the emotional engagement they experienced at the time of the experience. They give the example of a pre-schooler who may clearly remember the spider in the bathroom during a comfort stop on the way to the circus, but forget the children (s)he travelled with. On the other hand, it is likely that an adolescent male’s

⁵ Te Papa – translation to English means Our Place: Museum of New Zealand, situated in Wellington, New Zealand.

⁶ Tainui is a tribal waka (canoe) confederation of New Zealand North Island Māori iwi or tribes.

memories of a visit may include considerable interest in the girls he travelled with and little for the spider in the bathroom” (Anderson, Thomas, & Ellenbogen, 2003).

A further example observed during a Ministry of Education research project (Moreland, et al, 2005) when a class of students was taken to the City Gallery in Wellington to view an art exhibition. The most frequently recalled incident of the visit was the students’ shock as they entered the gallery and needed to step over an artificial ‘dog poo’, which had been deliberately positioned in the hallway by the artist. The sight of the deposit was met with loud protest from the students, before it was explained by the Gallery’s education officer that it was an intentional joke provided by the artist. Not surprisingly, it was this emotionally charged element of the visit that the students referred to most frequently in the stories and pictures they drew afterwards, rather than the details of the exhibition itself.

Research in the field of EOTC suggests that prior knowledge of exhibits at a site and a clear purpose for the visit, helps give focus to the experience and enables a student to engage more readily with the displays that s(he) encounters. Past experiences, (prior knowledge) be they cognitive, affective, behavioural, social or cultural, will help structure the new learning in personal ways (Rennie & Johnston, 2004). For example, a group of students viewing examples of technologies from the eighteenth century will have their experience and learning opportunities and interest heightened if they are guided by a desire to obtain specific information. If students visit a site with some prior knowledge of the exhibits and a clear purpose, e.g. to gather information for a teacher-directed task, the combined elements will help give focus to their experience, and their prior knowledge or familiarity with the exhibits will enable them to engage more easily with each display. In contrast, a group touring for recreational purposes may well overlook much of the information available to visitors because of limited interest, lack of prior knowledge and no defined purpose for their enquiry.

Lambert and Balderstone (2000) argue for teachers creating a ‘need to know’ factor amongst students prior to going on a visit, effectively arming them with an authentic research purpose to be

accomplished during the visit.



Figure 2: Questions for the presenter during an EOTC experience

This type of learning, under the umbrella of ‘informal learning’, is best described as ‘perceived choice’ learning. Students motivated by the ‘need to know’ factor ideally approach a visit with a sense of freedom to select or take note of items that appeal to them and processes

they think would have relevance to complete a classroom based task. In effect they decide when, where and what to learn. An example from my own research (Milne, 2015) was students visiting a chocolate factory to find out how to make their own chocolates to celebrate Mothers' Day. Prior to the visit the students and their teacher wrote up a list of questions to ask the presenter at the factory so they could find out the ingredients they would need, how to make different kinds of chocolate, and how they could put fillings in the middle of the chocolate (see Figure 2). This information informed the students own practice on their return to school.

Further points of interest may be drawn from the work of Ash and Klein (2000) who highlight a number of valuable features which they consider enhance students' informal learning experiences outside the classroom. They argue that this type of experience must be enjoyable, visually oriented and offer opportunities for co-operative learning. Exhibitions should have elements of interactive activity, and tasks should be open-ended and non-structured.

Table 1: Contextual Model of Learning (Falk & Dierking, 2000)

PERSONAL	SOCIO-CULTURAL	PHYSICAL	TIME
This includes motivation and expectations, prior knowledge, interests and beliefs, and choice and control	This context includes within-group socio-cultural mediation and facilitated mediation by others	This includes advance organisers and orientation, design and reinforcing events and experiences outside the museum	Managing random events that impact on the quality and quantity of learning

A planning framework

Bringing many of these ideas together, Falk and Dierking (2000) developed the Contextual Model of Learning (see Table 1). This is a valuable planning framework that consists of three over-lapping contexts, the personal, the socio-cultural, the physical (Falk & Dierking, 2000) and latterly, the addition of time (see Table 1 for further details). These contexts play an important role in structuring the three phases of planning necessary for a learning experience outside the classroom – (i) what happens before a visit, (ii) during a visit and (iii) the follow-up to the visit (see Table 2).

Table 2: Summary planning chart: Considerations for EOTC and Technology focused visit
EOTC Event Procedures

Planning		Managing
Before Visit	During Visit	After Visit
Contact and visit site to establish shared view of the learning opportunities	Visit to factory in groups, each with a	Follow-up to factory visit: <ul style="list-style-type: none"> • review and confirmation of new concepts

and planned curriculum learning intentions	'knowledgeable other' to ensure focus on LIs
Liaise with supervising staff/ helpers to clarify their role in the visit	Connect final three phases of students' technological practice with the knowledge gained during the visit and their final outcome
Prepare students for visit procedures and clarify purpose of the visit	Facilitate: <ul style="list-style-type: none"> • market research and design process; • product construction process; • review and reflection of design and final outcome – 'fitness for purpose'

The Contextual Model of Learning (Falk & Dierking, 2000) guided the structure of the planning framework seen in Table 1, and the following list summarises the key points from this and other literature that were identified as being important. Teachers planning for an EOTC visit will find this helpful when planning their own EOTC experience for both primary and secondary students. The key ideas are generic across all levels.

Firstly, a teacher's reason for taking students on a visit is *the* most important decision when planning a learning experience outside the classroom. Is it to motivate students, is it to introduce new ideas or is it to consolidate previous learning? Secondly, the selection of the site and the match between the cognitive level of students and the thought processes required by the exhibits during the visit will also significantly affect the students' engagement so this decision is a particularly important one. Once these decisions are made, the following points, are worthy of teachers' consideration. They are organised under the headings of the Contextual Model of Learning (Falk & Dierking, 2000).

(i) Personal context

- Consider the extent to which students are familiar with the setting of the visit i.e. where possible, the selection of a site is of "appropriate novelty" that will link directly to the classroom programme (Falk & Balling, 2001, p28).
- Ensure there is clarity around the purpose of the visit from both the teacher's perspective and that of the students (Jarvis & Pell, 2002).
- Ensure the teacher is well prepared prior to the visit but also the students are knowledgeable of where, how and why they are visiting a site i.e. they should acquire a 'need to know' motivation for the visit (Tofield et al., 2003; Anderson, 2003).

- Gather data that will identify the students' prior knowledge of the context of the visit and will enable the teacher to plan appropriate pre and post visit activities that will both reinforce and extend student learning (Rennie & Johnston, 2004; D'Angelo, Touchman & Clark, 2009).

(ii) Socio-cultural context

- Plan for the provision of the 'knowledgeable other' (Vygotsky, 1994) – parent helpers and/or staff who understand the learning intentions of the visit and will assist and guide students during the visit (Schauble, Gleason & Lehrer., 2002).
- Consider the social aspects of the visit and how this will impact on student learning – students should be organised into small groups based on their interests and the knowledge they bring to the experience (Falk & Adelman, 2003).

(iii) Physical context

- Consider the degree of structure required for the visit to enable a safe, enjoyable and focussed experience where students have easy access to bathrooms, exits from the site and reasonable access to refreshments (Falk & Dierking, 2000) and as per EOTC events procedures documentation.
- Organise pre-planning to ensure the visit includes hands-on exhibits and experiences (Rennie & Johnston, 2004).
- Select an experience outside the classroom that is novel, relevant, real world and age-appropriate for the students (Anderson et al. 2003).

(iv) Time

- Select shorter focused visits rather than all-day events (Falk & Balling, 2001).
- Plan the timing of visits to avoid peak visiting time and unnecessary distractions (Milne, 2015).
- Organise the visit so that unexpected events can be managed (as per EOTC events procedures).

Concluding comments

Access to expert practice in the 2007 Technology Education curriculum is fundamental to the development of students' technological literacy and whilst this may be acquired within the classroom, the viewpoint of this paper is that this is achieved most effectively in concert with learning experiences outside the classroom. Students in all sectors of the New Zealand education system have increasing access to digital technologies, the internet and an ever expanding availability of worthwhile

virtual experiences. However, the literature quoted in this paper supports the notion of real-world contexts and real-world experiences, which when linked to students' studies within the classroom, can significantly influence their learning.

Providing students with first-hand, engaging and relevant experience outside the classroom, in which there is an emotional or sensory connection with the exhibits, enables students to transfer understandings from one experience to a new one, and has the potential for key ideas to be recalled many years later. Education outside the classroom is fundamentally good (Milne, 2015) and despite the sometimes arduous task of completing consent documentation, the educational outcomes are unquestionably beneficial for both students and teachers.

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