

## Typologies of Learning Design and the introduction of a “LD-Type 2” case example

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This paper explores the need for greater clarity in the conceptualisation of Learning Design (LD). Building on Cameron’s (2010) work, a three-tiered LD architecture is introduced. It is argued that this conceptualisation is needed in order to advance the emerging field of LD as applied to education research.

This classification differentiates between LD as a concept (LD Type 1), LD as a process (LD Type 2), and LD as a product (LD Type 3). The usefulness of the three types is illustrated by a case example of a virtual history fieldtrip module constructed in LAMS as Type 2 LD. This case shows the workflow from LD Type 1 to LD Type 2, followed by LD Type 3 research and development data. History as a learning area was chosen in this paper for its ability to illustrate LD concepts and the interrelationship of LD types.

The case serves to illustrate the foundations, scope and ambitions of this learning design project, which was underpinned by an educational psychology framework and firmly linked to the goals of the new Australian curriculum. The purpose of LD as process is to inform other teachers of the affordance of LD, providing contextualised data and to invite critique of particular TEL practices.

### 1. Introduction

Technology-mediated life experiences are on the increase. This ‘ICT-isation’ (Rush, 2008) or ‘digital turn’ (Buchanan, 2011) of all aspects of our lives, through the increased importance that is placed on technology-mediated (inter)action, is, so it could be expected, also greatly affecting all levels of education. However, a recent study found that many Australian and Canadian secondary and primary History classrooms still operate in traditional ways, showing the same war movies to various year groups, using outdated textbooks and taking children to the local museum (Clarke 2008). As one student in Clarke’s (2008) study observed: “The videos are shocking and some of the textbooks, too, are like from 1988, and that’s how old we are’ (p. 7). This research finding echoes others and is illustrative of two problems in teacher and school education in Australia and elsewhere: (a) the persistent disconnect between students’ ‘life world’ and classroom experiences, and (b) the ineffectiveness of ‘ad-hock’ and ‘add-on professional development solutions’ to the traditional teacher-centric, whole-class pedagogical strategies that have been successfully applied over the last few decades in schools and teacher education in Australia.

The teaching and learning of effective technology-enhanced and/or mediated learning design that is student-centric and highly personalised and teachers’ general understanding of the value-added nature of new developments in pedagogy is urgently needed (see Dobozy, forthcoming). The ‘digital literacies’ component of the curriculum will need to be introduced to teacher education students, not only in an isolated ICT workshop or specialised profession-

al development course, but rather will need reinforcement and modeling through the embedding of TEL as part of their 'normal' learning experience and situated in context. The inclusion of technology-enhanced curriculum design and the expansion of traditional modes of learning and teaching have to be documented in a way that is accessible to teachers, providing a nexus between theory and applied practice. This will allow pre-service and in-service teachers to become cognisant of the range of new pedagogical strategies and enable them to develop an informed view about the effectiveness (or otherwise) of current teaching and learning practices. Increasingly the educational literature is critical of formal education's ability to provide learners with opportunities that enable them to develop knowledge and skills needed in a globalised and networked world (Beetham, McGill & Littlejohn, 2009). There is still reluctance in the education community to embrace TEL as possibly providing more effective learning opportunities than traditional, whole-class face-to-face teaching, because it is highly interactive, flexible, personalised and relevant to today's students (Conole, Brasher, Cross, *et al.* 2008; Ertmer, 2005).

## 2. Learning Design 101

This paper utilises History teaching and learning in the new Australian curriculum as a learning area case example. Nevertheless, what is under review here is not so much the learning content, but rather the pedagogical approaches taken that support the learning of the required content. In the case of pre-service teachers' learning about History and historical literacy, the con-

tent of the compulsory social studies units inevitably includes pedagogical content knowledge (Fisher, Higgings & Loveless, 2006). In the recent educational literature, this area of study, which increasingly involves technology to enhance learning, is referred to as 'learning design' (Dalziel, 2009); 'instructional design' (Chu & Kennedy, 2011); 'curriculum design' (Ferrell, 2011); 'educational design' (Goodyear & Ellis, 2011), 'design for learning' (Beetham & Sharpe, 2007), 'design-based learning' (Wijen, 2000) or in the educational psychology literature referred to as 'technological pedagogical content knowledge (TPCK) (Juang, Liu, & Chan, 2008). Despite the variety of terms used, the phrase 'learning design' seems to gain prominence in Australia and the United Kingdom. Nevertheless, the increased use of the term 'learning design', without a specific definition of its meaning, makes it problematic to further this emerging field of study. For example, in their recent Open Education Resource impact study, Liz Masterman and Joanne Wild (2011) used the term 'learning design' close to thirty times, mixing and matching it with other common educational terms to construct phrases such as 'learning design tools' 'learning design environments', 'open learning designs', and even refer to 'the learning design approach' without defining the concept. Conducting research into Learning Design demands an understanding of the concept and the development of shared understanding among researchers and participants. The lack of conceptual clarity leads to confusion as Berggren and colleagues (2005) powerfully illustrate:

The initial immersion into Learning Design gave us an experience of confusion over terms, concepts and tools. Our group

Type	Description	Goal
LD – Type 1: LD as a concept	LD as a concept, underpinned by social constructivist/connectivist learning theory, is a standardised (re)presentation of technology-enhanced learning sequences and prescribed design-based procedures that are content independent.	A documentation of the establishment, benchmarking and testing of and adherence to design-based principles and practices with the aim of providing a theoretical foundation to assure consistency and contribute to the testability of the effectiveness of this new theoretical construct.
LD – Type 2: LD as a process	LD as a process is an illustration of the interpretation of the generic LD principles and an attempt of the implementation of LD into practice by outlining learning intent, planning and enacting of a particular learning sequence in context, which includes subject-specific content.	Providing a documentation of process in a particular context, with the aim of informing other teachers of the affordance of LD (benefits, obstacles and risks) through a detailed explanation of experiences of various stakeholders.
LD – Type 3: LD as a product	LD as a product is a documentation of teacher and student roles and resources needed (similar to documenting and sharing paper lesson plans) in the enactment of a particular LD sequence.	Providing a documentation of process with the aim to construct a model, template or pre-engineered learning construct to share with other teachers to be adopted, adapted and enhanced.

Table 1: Typologies of Learning Design

constantly mixed discussions amongst conceptual points, codified specifications and multiple tools which are in various stages of development. Teachers will need to grasp these differences before a meaningful discussion can take place. (p. 4)

Table 1 is taking Cameron's (2010) classification work as a starting point. Synthesising and adapting her conceptualisation of learning design (LD), the purpose here is to make meaning of this elusive concept and contribute another tentative construct that can be advanced further as we gain more insight into the learning design construct.

Echoing Cameron's (2010) views that the emerging field of LD holds great promises, it is contended that the consistent structure for experimenting, documenting, reflecting and sharing teaching and learning strategies allows for the development of generic models as templates to be used in a variety of contexts and with diverse students. Following specific design norms, underpinned by social constructivist and/or connectivist learning theories (see Dobozy, Campbell, & Cameron, 2011); LD makes the teaching and learning process explicit to teachers and learners, therewith contributing to teacher and/or learner accountability and reflection. The potential for quality improvement of learning and/or teaching is possible precisely because it is a cycle of innovation, dissemination translation and transformation, which can be conceptualised as a new, community-based, ecological paradigm of teacher learning (Berggren, Burgos, Fontana et. al., 2005). The underpinning notion of LD, as expressed in Table1, is that learning design can be classified according to type (Type 1: LD as concept; Type 2: LD as process, and Type 3: LD as product). It is argued here that unless there is greater clarity about the LD classification, the advancement of learning design knowledge may be inhibited.

How these various types of LD seamlessly integrate is illustrated in Figure 1.

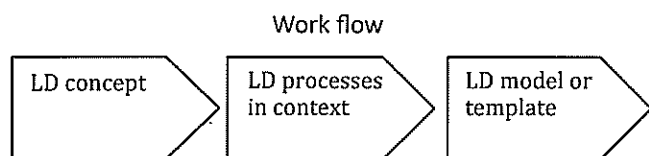


Figure 1: Conceptual structure of LD type integration

LD as a process is an illustration of the learning intent, planning and enacting of a particular learning sequence in context, which includes subject-specific content. What the above discussion

alerts to and Figure 1 illustrates is that it is imperative to make explicit the way LD is conceptualised (Type 1), prior to engaging with LD as a process (Type 2), applying LD – Type 1 principles. Hence, in what follows, I offer an alternative, more precise description of LD to the one outlined in Table 1, prior to providing an example of LD as a process (Type 2 LD), illustrating the learning intent, planning and enacting of one learning design sequence in LAMS. The definition of LD (Type 1) offered below is somewhat different from the adopted work of Cameron (2010) and is reflecting my current understanding of LD (Type 1) in an attempt to provide a system of classification:

LD (Type 1) is a conceptual construct making explicit epistemological and technological integration attempts by the designer of a particular learning sequence or series of learning sequences. The design process is generally informed by social constructivist and/or connectivist learning theories and aims to share the LD theory/praxis nexus in an attempt to open the LD sequence/s up for adaption, adoption and/or enhancement.

Based on this conceptualisation of LD – Type 1, the Type 2 LD was built as an online module constructed in LAMS and seamlessly embedded through a plug-in in the Blackboard LMS. It was designed to introduce undergraduate and/or graduate diploma teacher education students enrolled in the compulsory Society and Environment units (SSE2105/SSE4215) to the principles and practices of virtual history teaching, through the illustration of the nature and purpose of virtual History fieldtrips. LAMS is an ideal tool for the actualisation of LD, described by Dalziel (2005) as a 'learning design system' (p. 1), which is remarkably different from conventional LMS, such as Blackboard, Moodle or Desire2Learn (Dobozy, Reynolds, & Schonwetter, 2011). The major difference described by Dobozy et. al. (2011) is in the way these online learning systems are conceptualised and used by lecturing staff and students. Whereas LMS are used mainly as resource repositories and for management purposes, LAMS seems to have a pedagogical focus (see also Dalziel, 2005).

### 3. Traditional history teaching and the new Australian curriculum

History as a learning area has gained prominence in the new Australian curriculum, which is currently being developed. Although it is not the first time a national curriculum is on the agenda, it is the first time it is being actualised. The reason given by the current Federal Government concerning the need for a

national curriculum, which is “one of the first in the world to be delivered online”, is “to ensure Australians are armed with the knowledge and skills to meet the demands of the 21st Century” (Australian Labor, 2011). The inclusion of History in the first phase of the development of the Australian Curriculum is based on the realisation that today’s young are generally disinterested in and ill-informed about Australia’s system of government, its current role in a globalised world and its recent history. An example of the lack of historical literacy is provided in a report prepared by the Ministerial Council on Education, Employment, Training and Youth Affairs (2006), which explains that the vast majority of Year 10 students (77%) in a national Civics and Citizenship proficiency assessment did not know that the Australia Day celebrations are attributed to the arrival of the first fleet of 11 ships from the British motherland in 1788. A more recent study conducted by Clarke (2008) into the ways students and teachers think about Australia’s history found that there is an acknowledgement of the importance of the learning area, but the disconnection of students with History as a subject matter is attributed to the way it is taught. Clarke (2008) observes:

While ... students overwhelmingly acknowledge the importance of learning about the national history in school, many of them criticise the subject for being boring and repetitive. ...[T]eachers frequently felt disappointed they couldn’t do more for the classes. And even in those schools with better access to resources there remains the question of how teachers use the material available to them. (p. 5)

Clarke’s (2008) research found that the main reason of frustration with the learning area reported by teachers and students can be attributed to learning design issues. Teachers note that there are often insufficient resources available and students generally find the subject area ‘boring’:

Students are sick of repeating topics and boring material; they want engaging teachers who love what they do and can bring imagination to their lessons. For their part, teachers and curriculum officials also want the subject to come alive in the classroom and to be as relevant and interesting as they feel it can and should be. (Clarke, 2008, p. 11)

Given Clarke’s findings, which support the evidence provided by MEETYA (2006) concerning students’ lack of interest in and understanding of History, it was seen as imperative that teacher education needed to take some responsibility and review its history teaching curriculum. As a result, novel pedagogical approaches were introduced in the compulsory unit Society &

Environment (SSE2105/SSE4215) at our university. The design of the curriculum was based on inquiry-based and interactive learning principles and informed by latest research (Hill & Fetherston, 2010). The learning design had to make the learning area relevant to teacher education students and provide ways to engage them with each other and the curriculum material. History education includes the goal to commit students, at all levels of education, to become active and informed citizens, able and willing to express their own views and to be creative in the pursuit of knowledge. Hence, it is important to engage students of History with questions of values, beliefs and attitudes that relate to the teaching and learning of historical facts and concepts. Therewith students develop their historical literacy as outlined by the Australian Curriculum Assessment and Reporting Agency (ACARA) in the new Australian curriculum (ACARA, 2011), rather than simply learning to remember disjointed facts. This holistic conception of History teaching includes the development of affective processes and cognitive information processing (O’Donnell, Dobozy, Bartlett et. al., forthcoming). The virtual history fieldtrip module that was constructed in LAMS and is used here as a case example, illustrated the balancing of different learning goals as set out by ACARA (2011) is underpinned by a social constructivist and/or connectivist epistemology. The aim of the LAMS learning module was to provide experiential learning opportunities for teacher education students and introduce them to a new way of history learning and teaching that is cost-effective, interactive and responds to school students’ interest in and knowledge of Web 2.0 applications (Chu, & Kennedy, 2011).

#### 4. LD – Type 2 case example: The virtual history module in LAMS

The virtual history module commenced with a general introduction about online history teaching, alerting to the extensive resources and various mediascapes developed recently by Australian and international educational authorities (see Figure 2 for an ‘author’s view of the complete module’).

One of the many attractive features of LAMS, as a learning design platform, is the possibility of seamless integration of external resources into the learning activity, making access easy and convenient for learners (see Figure 3). Students can choose to explore as many of the outside resources provided as they see practicable or useful for their learning, or simply engage with the set activity.

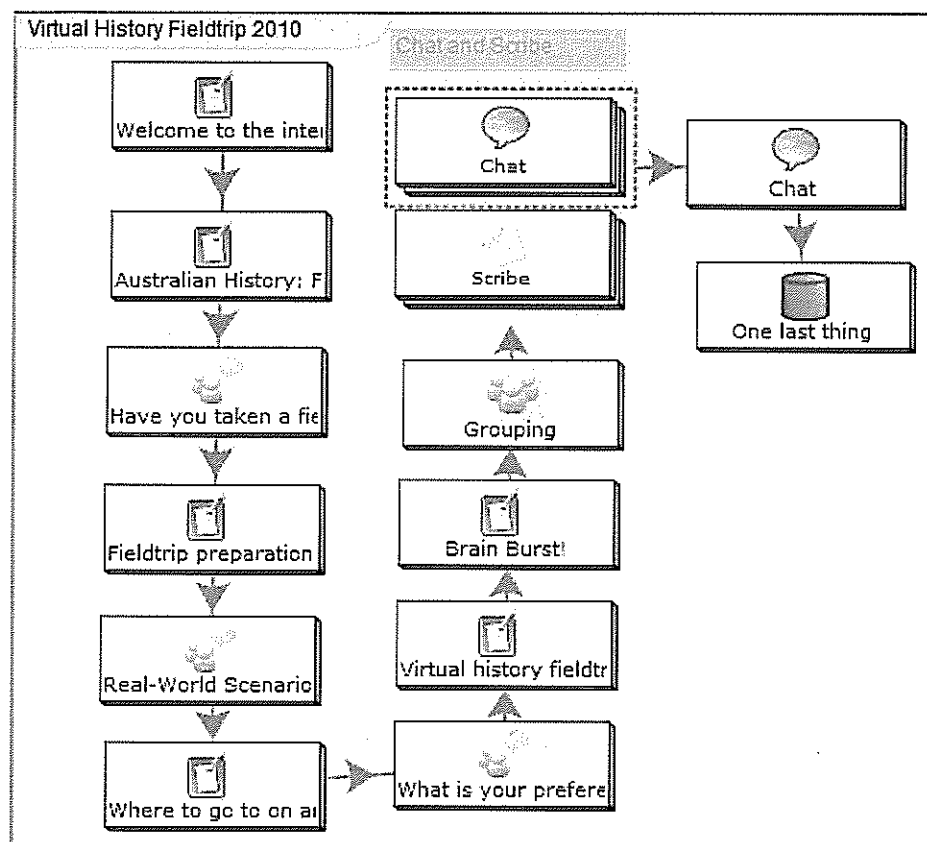


Figure 2: Author's view of virtual History learning module

The deliberate composition of multimedia texts, taking advantage of the possibility of multimodality (Kress, 2010) of technology-enhanced learning design, incorporating YouTube videos, digital archive documents, webpages, blog entries etc, aims to encourage a sense of agency in students. The new mode of communication, referred to by Anne Wysocki (2004) as 'new media texts', provides a platform for various forms of engagement with the multitude of resources that are 'pulled into' the particular learning activity. Wysocki (2004) explained the value of this form of LD as follows:

I think we should call 'new media texts' those that have been made by composers who are aware of the range of materialities of texts and who then highlight the materiality; such composers design texts that help readers/consumers/viewers stay alert to how any text-like its composers and readers- doesn't function independently of how it is made and in what contexts. Such composers design texts

*Now let's look at some Australian initiatives. I am certain that you will find the various mediascapes developed by Australian educational authorities very useful indeed. Remember, they have been made available to you to encourage pedagogical exchange and professional learning. Look around, take notice, come back later ...*

(AUS) [OZ TEACHERNET](#)

(AUS) [EdNA ONLINE](#) (check out the resources and National Curriculum links)

(AUS) [History Teachers' Association of Western Australia HTAWA](#) (check out the History Links)

See if you can 'click' your way through to the Pandora archives (without using the link) and find the reference to Western Australia in *Part 1 of The Federation Story*.

If you are unable to do this, try it backwards: 'click on the link ([Australian History Timelines/Pandora Archive/Federation Frontline](#)) and see if you can get to it from the HTAWA website - a truly handy resource to have when preparing History lessons!

Figure 3: Seamless integration of external resources into LAMS activities

that make as overtly visible as possible the values they embody. (p. 15)

The composition described here is the learning design process (Type 2), which, naturally, is underpinned by LD principles (Type 1) and the definition of LD provided above. It offers opportunities for personal exchange in conjunction with the acquisition of new information provided through multiple media resources and activities. The deliberate design provides an avenue for student agency and freedom (see Dobozy, 1999).

Following on from the general introduction to the module, the learning sequence commenced with a statement about the common occurrence of fieldtrips in social studies classes and their relevance in the new Australian curriculum. It made ref-

erence to and built on students' previous curriculum topics in educational psychology units concerning 'cooperative learning', 'student motivation' and 'personal values developments'. This introduction segment, which was linking to various current national policy documents and information from previous units was then followed by an interactive learning activity developed using the LAMS Forum tool. The task was purposely designed to ground the policy document review and past unit reference information by way of connecting them with personal experiences during students' primary and secondary school excursions and fieldtrip memories (see Figure 4).

The particular design sparked interest and encouraged students to participate actively in the discussions, sharing personal experiences. Following the goal of LD – Type 2, this section of the

### Have you taken fieldtrips in S&E?

*Please tell each other what your experiences were as (a) a Primary School Student and (b) a High School Student.*

*Have you taken fieldtrips as a student?*

*Where to?*

*What was the purpose of the trip?*

Subject	Started by	Replies	New
<u>How often have you taken fieldtrips?</u>	Eva DOBOZY	43	44
<u>Where did you go?</u>	Eva DOBOZY	22	23
<u>Why did you visit these places?</u>	Eva DOBOZY	17	18
<u>Accidents &amp; Problems</u>	Eva DOBOZY	19	20

Figure 4: Interactive forum activity exploring personal experiences

### Fieldtrip preparation

It is expected that most, if not all of you will have taken fieldtrips regularly as part of your school experience.

Many beginning teachers feel less secure in organising fieldtrips and knowing how to prepare for them, although they realised the potential benefits for students.

### So, let's explore the topic of organising a History Excursion.

Where should we start? What should we do first?

Note: During your next prac experience, don't forget to ask your mentor teacher/s how they prepare for an excursion and if they would be prepared to give you copies of:

- (a) their letter to parents,
- (b) list of resources, and
- (c) excursion management plans.

Not only do you need to think of learning outcomes, parent letters and policy requirements, but you need to think of **how to prepare the children for the trip**. Remember, each class has at least two children that require special attention. How can you ensure that the trip will be a success for you and the children? Let's see what you think ...

In your Notebook, write a list of things you would need to do and put them in order of importance (place the most important issue at the top of the list).

Figure 5: Fieldtrip preparation – linking personal experiences with pedagogical knowledge

Real-world scenario: Making the Most of a Visit to the Maritime and Shipwreck Museum

## Making the Most of a Visit to the Maritime and Shipwreck Museum

Nikki and Aaron's history class will be taking a field trip to a nearby museum. The Maritime and Shipwreck museum is hosting a once-in-a-lifetime exhibit and Nikki and Aaron show much promise in their understanding of Australian history. Their teacher, Ms. Taylor, wants them to have as rich an experience as possible, but she is concerned that without direct supervision, they will not be as engaged in the learning aspects of the trip as they could be. On the other hand, she does not want to turn a field trip into an unpleasant experience for them. What reasonable steps can Ms. Taylor take to make this a valuable and memorable learning experience for all children, including Nikki and Aaron? Here are some suggestions:

1. Prepare all the students for the trip by discussing some historical artifacts they can expect to see
2. Assign student leaders of small learning teams that provide an after-education report to the class. Ask Nikki and Aaron if they wish to lead a group of students.
3. Have each learning team develop a set of questions to try to answer while they are at the museum.
4. Assign Nikki, Aaron and other team leaders to explain their group's problem-solving strategy to help them find answers to their questions efficiently and effectively.
5. Ask the students to rate the exhibits according to a classification system developed by the class.

Subject	Started by	Replies	Type	Last post
History - Maritime and Shipwreck Museum	Mr. DODSON	27	28	10 September 2010 4:22:26 PM GMT+10:00
History - Maritime and Shipwreck Museum	Mr. DODSON	22	23	10 September 2010 4:22:26 PM GMT+10:00
History - Maritime and Shipwreck Museum	Mr. DODSON	18	19	10 September 2010 4:22:26 PM GMT+10:00
History - Maritime and Shipwreck Museum	Mr. DODSON	15	16	10 September 2010 4:22:26 PM GMT+10:00
History - Maritime and Shipwreck Museum	Mr. DODSON	12	13	10 September 2010 4:22:26 PM GMT+10:00

Figure 6: parts (a) and (b): Scenario-based collaborative learning

paper is concerned with documenting the design process in a particular context. Hence, it will continue to outline the design steps of this learning module in some detail. The personal experience sharing activity is followed by the dissemination of technical and pedagogical information concerning the organisation of History Excursions (see Figure 5).

As depicted in Figure 6, a case scenario was constructed that requires students' input and deep engagement with the subject matter. The real-world case scenario was inviting learners to analyse their prior knowledge, and synthesise the theoretical and practical information to arrive at a conceptual framework that can be discussed and debated with peers.

Following on from requesting students to provide their ideas and considerations to a number of questions, a list of possible locations for the History Excursion is provided. The activity then invited students to review possible excursion sites that do not include the typical local museum trips, but instead provide attractive alternatives, complete with links to websites and other multimedia resources. Students are required to explain their top three preferred history excursion places and calculating the financial cost and time investment for one of their choices. Completing the segment on the customary physical history fieldtrip, students were then introduced to the concept of virtual history fieldtrips and their organisations, again complete with external links and plenty of resources (see Figure 7).

Only after exploring traditional physical fieldtrip preparations and reflecting on personal past experiences did the module progress to outline the nature and purpose of virtual history fieldtrips. Many practising and trainee teachers have limited knowledge and understanding of virtual history fieldtrips, their purpose, organisation and benefits for teachers and learners (Brush, Saye, Kale, et. al., 2009). Hence, it was important to provide teacher education students with sufficient information and interaction possibilities to experience the preparation and enactment of various forms of history excursion.

The virtual history fieldtrip activity (see Figure 7) was designed to be the highlight of the module, providing a clear example and experience of a virtual history fieldtrip based around a problem to be solved in collaboration with peers. Teacher education students were able to experience the benefits of accessing multimedia resources that have been carefully chosen and linked in with the activity. Using LD – Type 1 principles, the module was constructed in a way that permitted students to spend as much or as little time with the additional resource material provided, dipping into the movie or watching the complete segment, depending on interest and motivation. Self-regulation and the mobilisation of intrinsic motivation are both vital 21st century learning skills and are increasingly demanded as vital attributes of knowledge workers (see Beetham, McGill, & Littlejohn, 2009).



## Let's go on a virtual history fieldtrip

Your question for today's virtual fieldtrip is:

*"What did 12-year-old girls wear in the Age of Napoleon?"*

### Learning outcome:

Students understand the similarities and differences of dress codes of the Age of Napoleon (1799-1815) and the Age of Google (today), making comparisons between life in the past and the present.

### Learning process:

Older students conduct e-research to find a number of exhibitions on "Dress in the Age of Napoleon". After exchanging information on "the most valuable sites" students write a journal entry and prepare a poster presentation. For younger students, you would provide them with some resources. It is important that you, as the teacher, will have researched the topic and are aware of the resources that students are likely to find, irrespective of the fact that you will provide them with the resources or let them find them by themselves. Remember the saying: Help me do it myself! Do not do for students what they can do themselves.

For older students or students experienced in project work:

If the teacher decides not to make available the resources of her/his own e-research, s/he could say:

*Now embark on your travel back in time, exploring the relationship between fashion/clothing, social and political life and history.*

For younger students, or students who are not (yet) able to engage in independent e-research

If the teacher decides to make available the resources of her/his own e-research, s/he could say:

*You are now invited to travel back in time, exploring the relationship between fashion/clothing and the way of life in the past in Europe*

Good places to start your trip:

- The 1998 movie *Les Misérables* after the novel from Victor Hugo (1863) with the same title
- [The Fashion Era website](#)
- [The History Guide website](#) (see also) developed by Steven Kreis

Enjoy your trip!

Figure 7: Experiential, problem-based learning example

The final discussion activity intended to draw learners' attention to the vast time investments required of teachers and financial costs associated with traditional History fieldtrips. This LAMS module was designed to engage teacher education students, many of whom were, similar to the school students they will be teaching in the not so distant future, not particularly interested in or excited about History as a learning area. Providing more

opportunity to (a) connect personal experiences with theoretical information (such as illustrated in this LD-Type 2 example), and (b) enlist Web 2.0 technologies in teaching and learning, for example, through virtual history fieldtrips, may help students gain interest in and connect with the new Australian curriculum. Although this module did not form part of students' assessment requirements of the unit, it was encouraging to see the general

### History Brain Burst

You have been put into random groups of six students.  
Now it's time to let your creative juices flow.  
Remember - just write down whatever comes to mind!

The fact is:

**We only have two hours (max) per week allocated for S&E related topics.**

The two questions we would like you to discuss are:

**Q 1: How much time per week or term should be devoted to History teaching?**

**Q 2: How much time should be devoted to the teaching of skills (historical inquiry) and how much time should be devoted to the teaching of knowledge (historical facts/events)?**

Figure 8: Collaborative reflection about pedagogical reality in primary classrooms



interest in and engagement with the curriculum content provided.

## 5. Discussion

The underpinning notion of LD, as exemplified in this paper, is that learning design can be classified according to type (Type 1: LD as concept; Type 2: LD as process, and Type 3: LD as product). It was argued that unless there is greater clarity about the LD classification, learning design research and development activities may not advance at the rate possible otherwise. History as a learning area was chosen to illustrate LD concepts and the interrelationship of LD types. The introduction of the nature and purpose of virtual history fieldtrips to pre-service teachers as a particular case example of LD – Type 2 illustrated the pedagogical strength of LAMS as a LD system, enabling the documentation and critiquing of all types of LD. The virtual history fieldtrip case example makes explicit the pedagogical decision-making of teachers and operationalisation of the decisions taken. The LD – Type 2 is, as noted above, illustrating LD process in a particular context, with the aim of informing other teachers of the affordance of LD and also to invite critique of particular, contextualised learning and teaching processes. Hence, it is a case illustration, not of a 'perfect' case, but rather, in the sense of 'perpetual beta' of a 'case in the state of becoming'. For this conceptualisation to be feasible, it is vital that pedagogical, conceptual and epistemological considerations are documented and shared with the wider professional community. In this sense, the current paper outlined how the module was purposely designed to commence with learners' personal experiences as students, providing a connection to students' life world, enabling them to link into the topic and curriculum theory. This activity was then linked with considerations and preparation activities of teachers which need to be observed for physical fieldtrip activities, such as the need to describe learning goals, contacting the institution to be visited, booking the venue, education officer, parent helpers and transportation, writing parent letters, gaining consent from the school administration and parents/guardians of students, prepare a budget and organise the collection of funds and so on, prior to focusing on the vital element of preparing the children for the fieldtrip.

LD and the introduction of virtual fieldtrips in LAMS provides teachers with a framework to enhance the engagement of students with history learning that can be adopted, adapted or expanded. Enhancing the provision of TEL is not only a requirement of the new Australian curriculum, but is also potentially

improving the quality of history learning and teaching through the application of LD principles (LD – Type 1) in particular contexts and through model development for further adaptation. It was further argued that by making the teaching and learning process explicit, the emerging field of LD is potentially able to contribute substantially to teacher and/or learner accountability, in an environment that requires a departure from traditional teacher-centric and content-driven low-level knowledge production and testing of the past, in favour of more complex knowledge and skills development, vital for success in 21st century knowledge societies of the present and future.

## 6. Conclusion

In an effort to change teaching cultures to enable greater value to be placed on teachers' and students' 'literacies of the digital' (Beetham, et. al., 2009) in higher, further, teacher and/or school education, educational researchers working in the field of learning design will need to work towards unity of conceptualisation and agree on a tentative classification system to advance evidence-based practices. Slavin (2008), who has a long history of criticising the lack of clarity and unity in educational research and practice, explained that "education today is at much the same pre-scientific point as medicine was a hundred years ago". To advance LD as a field of applied education research, it will need to mature and agreement will need to be reached upon some core shared values and explicitly stated foundational thinking that will underpin future empirical work. To this end, a three-tiered LD architecture was outlined, which was based on Cameron's (2010) initial ideas and further developed. Moreover, LD – Type 2 (LD as process) was introduced as a case example to illustrate the way in which the three-tier model can be utilised. The current conceptualisation and typologies of LD was intended to serve as a starting point for discussion and debate. It is hoped that future theoretical and empirical researcher will advance the model and therewith work towards greater clarity of LD principles and practices in the future.

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