

# Fashion education

# Pushing the boundaries of technology: e-Learning in Fashion Education

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## Abstract

In Australia we are using competency based Training Packages in the Vocational Education and Training (VET) sector. An added focus in the School of Fashion & Textiles at Royal Melbourne Institute of Technology (RMIT) is the use of e-learning to enhance flexibility and engagement for learners. The challenge lies in incorporating e-learning for practical, hands-on courses such as garment production and pattern development. This year teachers were invited to apply to participate in a program to develop e-learning leaders whose task would be to manage a workplace project, focussing on development of a VET course which significantly incorporated e-learning. Our experience has found that learners from the X and Y generation, who form a large percentage of our cohort, are exhibiting characteristics which make traditional approaches to fashion education less effective. E-learning is seen as a way of engaging these learners and is also aimed at building more flexible industry based training modules (fee-for-service). To support the applicants for the e-learning leaders program in their role, a structured professional development program which was designed to build skills and knowledge in both e-learning and leadership. Along with the previously mentioned components of the program, the e-leaders were required to engage in independent research in a chosen area of e-learning technology, and contribute to the RMIT Teaching and Learning Web site relating to this area of specialisation. This paper examines the X and Y generation traits that are satisfied by engagement in e-learning. The strategies and tools used in the development of content will be discussed and an overview of the content developed for delivery through e-learning will be provided. These will be examined in the light of a constructivist approach to learning and teaching with comparison to the more traditional behaviourist approach to skills development.

Keywords:  
E-learning,  
fashion,  
learner engagement

## **Introduction**

In Australia we are using competency based Training Packages in the Vocational Education and Training (VET) sector. An added focus in the Fashion department at Royal Melbourne Institute of Technology (RMIT) is the use of e-learning to enhance flexibility and engagement for learners. This focus came about in 2005 when teachers were invited to submit a proposal to participate in a year long E-Learning Leaders (ELL) Program. To support the applicants in their role, a structured professional development program was offered which was designed to build skills and knowledge in both e-learning and leadership. Attendance at various conferences and associated research about pedagogy and e-learning clarified why E-Learning was being promoted. This paper will summarise these findings. A requirement of the ELL Program was to develop and manage a workplace project that significantly incorporated e-learning. An insight into that project will be included.

## **The emergence of e-learning**

There are several different schools of thought about the reasons for the emergence of e-learning. In his book *The World is Flat* Thomas Friedman (2005) explains that a big idea is required for transition into the twenty first century – the idea is to ensure that tertiary education is available to all. With technological advances and the increasing complexity of services, comes the need for even higher levels of skills to perform the new work. Education at tertiary levels means that more people will be available with the skills to carry out these new jobs. Lifelong learning is required to maintain skill levels. E-learning was developed to help meet the challenge. (pp. 289-90). More flexibility for delivery of teaching and learning materials and potential application for lifelong learning is seen as a major force in the development of e-learning. Wiseman (2005), claims that the initial driver “...of e-learning investments was the promise of cost reductions – reduced publishing and distribution costs, reduced travel expenses, the reduction of time spent away from the job by employees and reductions in time spent on learning.” (p. 21).

According to Wang (2006), we are well into the transition from an industrial age to an information society. We are accumulating knowledge at an exponential rate. Information technology has pervaded nearly every aspect of our lives, and information – its acquirement,

management and use – is the key to competitive advantage. He points out that the drive for lifelong learning has created a potential market with the emergence of the commercialisation of education as an extension of e-commerce. (p. 266) In short, higher education is becoming more consumer driven.

### **Defining e-learning**

To better understand the previous perspectives, it is necessary to examine what is meant by e-learning. There are several definitions available. Wiseman (2005) sees e-learning as a mixture of various event-based activities including face-to-face classrooms, live e-learning and self-paced learning. Frequently it is a combination of traditional instructor led training, synchronous online training, asynchronous self-paced study (pp. 21-22). This definition is supported by Naidu (2006), who sees e-learning as comprising a lot more than online learning, virtual learning, distributed learning, networked or web-based learning. The 'e' in e-learning represents the word 'electronic'. Hence according to Naidu, e-learning incorporates all educational activities that are carried out by individuals or groups working online or offline, and synchronously or asynchronously via networked or standalone computers and other electronic devices (p. 1).

### **E-learning and the generations**

We are a product of our times with the culture, technology, and the social markers forming our attitudes. These influences vary for the different generations. The baby boomer generation (1946–1964) saw different events unfold compared to the X generation (1965–1979). Xers were influenced by the happenings of the 1970s and 80s – the VCR, the Walkman, the IBM personal computer, the Stock Market crash, the fall of the Berlin Wall. Again these were unlike the influences on the Y and Z generations (1980 on) who are the world's first global generations. They are the ones who have experienced (from a young age) the influence of the Internet, email, SMSing, DVD and Play Station/X-Box. These individuals are multi-tasking and are completely comfortable with YouTube, MSN, MySpace and personal blogs.

### **Digital natives**

Some of the characteristics of the Y and Z generations have emerged because they have grown up in a fast moving, ever-changing society. As

a result, they place more value on speed than accuracy. Today's generations live in times where information rapidly changes and becomes outdated. The age of reason, debate and evidence has been replaced with one of perspective, perception, and experience. These generations are Digital Natives – shaped almost from birth by technology. Their first language (worldwide) is a technological one. The rest of us are Digital Immigrants who are able to use the latest technology – but we apply our structured thought and adult processing to it. (McCrindle 2006). We too must learn to push the boundaries of technology as these young people have.

A generation ago 70% of students were structured auditory learners. A structured and analytic approach to communication is helpful for auditory left-brain learners. For many in the 1970s the structured classroom and the 'talk and chalk' teaching approach was the only style on offer. However this structured approach to communication is far less effective today for the technologically confident, multi-media savvy generation Y. Their communication differs, they think in hyperlinks, they multi-task, value speed over accuracy and they absorb information from multiple sources. Figures today show that 30% of Generation Y is auditory and 70% are non-auditory learners, influenced by the visual nature of communication, and by kinaesthetic, collaborative and interactive styles. They live in a visual world. These generations are multi-modal and respond to a communication style that engages multiple learning channels (McCrindle 2006).

### **Engaging and motivating learners**

Formal lessons delivered by a teacher to the Y students are most effective when they are experiential and participative. Gen X and Y are the most educated generations in history. This together with familiarity and access to technology and therefore ideas, knowledge, and independence, means they are aware, informed and streetwise. When communicating with them, transparency, authenticity, and practicality are required. The focus needs to be on experiencing rather than explanation – they learn best through doing, experience or being included. Furthermore, Gen X and Y also need social interaction for successful learning. This is due in part to their learning styles (kinaesthetic and visual rather than literate and procedural) as well as their motivation for learning being social, collaborative, interactive, and fun! (McCrindle, 2006).

Research from Gen Y focus groups indicates that their ideal leader (teacher?) gives public approval, remembers individuals' names/interests, and creates an emotionally safe, welcoming, collegial surroundings where people feel free to contribute ideas. Lifelong education is a concept that Gen Y's have heard and accepted, with many of them working in industries and with technologies that did not even exist when they were beginning high school – web design, multimedia production, voice over internet protocol (VoIP) telephony. They understand that the way for them to remain relevant in changing times is ongoing training.

In Australia the population consists of 21.5% of Gen X, 20.5% Gen Y and 15% Gen Z. It is clear that these groups total the largest proportion of the population. They are the most recent additions to the workforce and the current students in the education system. It is crucial therefore to develop an understanding of how to successfully manage, motivate and market to them. To do this means keeping abreast of trends and responding quickly to their ever changing needs and wants (McCrindle, 2006).

These observations are supported by Nigel Paine (in Mouhtouris, 2006) who explains that with the increased focus on personalised learning, people recognise they have to take charge of their own learning destiny if they are to remain employable and keep their skills up-to-date. Being open to learning new things really depends upon the person having the motivation and interest in driving their own learning. To motivate learners, we must work the way they prefer. It is essential that teachers understand the lifestyle and the aspirations of the people they work with day in day out. We need to capture their environment and turn it into something relevant for learning – to push the boundaries. Our students already use the online environment to download songs and films (I Tunes, YouTube) and although they use Wikipedia we must explain how to access the online environment to learn. Paine (2006) advises that every skill-based program should have in-built skills such as research skills, team work and presentation skills. He believes teachers should be encouraged to use social computing tools – blogs, del.icio.us, MySpace, asynchronous discussion boards, synchronous (real-time) chat. He believes every program should have an online component that is easy for teachers to add information. It is important that all the 'new stuff' is not seen as simply an area handled by specialists, it needs to make an impact on the mainstream.

### **Pedagogy and e-learning**

Mejias (2005) suggests that an investigation of the tensions between pedagogy and technology should occur: "...not so much from the traditional perspective of how technology can or cannot support certain pedagogical principles, but rather from the perspective of a re-evaluation of teaching practices in light of the possibilities that new technologies may introduce". (p. 1). Accordingly, the question raised is what constitutes good teaching practice in e-learning? Teaching and learning practice based on constructivist and experiential learning theory is considered as best practice educational theory. This involves learning occurring through a continual process of constructing, interpreting, and modifying our own representations of reality based on our experiences.

However, to date VET pedagogy has been teacher-centred, that is, with focus on teaching and training processes rather than the learning process. Emphasis has therefore been on the selection and implementation of pedagogical strategies that steer learners in gaining previously identified knowledge and skills. The theoretical foundations of VET pedagogy have been behavioural and cognitive psychology, which hold significantly different beliefs about learning, thus promoting and legitimising different pedagogical strategies (Chappell, 2003a, p. 2).

### **Behaviourism and cognitivism**

Behaviourism focuses on observable behavioural change and promotes the view that learning can be enhanced, or inhibited, by the manipulation of the environmental stimuli surrounding the learner. Consequently pedagogical strategies such as demonstrations, reinforcement through practice, behavioural objectives with instructional cues and positive feedback mechanisms are planned and implemented by the teacher for learning to occur.

In contrast, cognitivism is more concerned with the mental processing aspects of learning. Therefore it suggests that the teaching process involves the selection and use of pedagogical strategies that allow learners to develop cognitive strategies and abilities. These strategies (e.g. framing, outlining, concept mapping and advance organisers) are seen as enabling learners to connect new information with existing knowledge in meaningful ways (Chappell 2003a, p. 3).

**Traditional lesson**

Thus far, the strategies common to behaviourism have been utilised in teaching the Specifications subject in the Fashion department. One of the learning outcomes focuses on the students developing skills and knowledge to create a size specification for a garment within a particular season's range. This specification is one of several that are used for quality assurance in the clothing industry. A typical lesson in establishing a size specification includes exposure to information about Australian Standards for Women's sizing – the history and significance of the standards and how to use them. Learners are provided with handouts of some of the pages from the Standard as a reference and directed to the library if they require a full copy.

The students are also supplied with different examples of specification documents from various clothing companies. The content is examined and explained and students are required to make notes. The vast majority of students have had no previous exposure to Microsoft Excel, the software used to create the document. Consequently information is made available in small 'chunks' so that the learners have an opportunity to become familiar with the program in a step-lock process. This lesson is timetabled in a computer room so the teacher is able to demonstrate to the class the features of Excel. This includes basic information, for example explaining cells, row and column numbering, formatting cells and using borders. Handouts of screen captures and text outlining the information support the demonstration.

One component of the size specification sheet is the measurement chart. Students need to include measurements for various points on the garment. Therefore, a further demonstration is given showing how to accurately measure the garment and record the measurements in an Excel table. The measurements are adjusted for the range of sizes offered in the garment. This entails another demonstration, with handouts on how to use (simple) formulas in Excel.

Students are also required to insert into the specification, a scanned garment sketch from a range of styles they have developed in their design subject. The sketch is a visual prompt to identify the garment for which the specification has been made and requires reference points to be indicated on it for the measurements. Students are shown how to



perform this process – including how to scan the image, insert it into the spreadsheet and then to add annotation.

This lesson exhibits many of the previously described characteristics of behaviourism. The criticism directed at the theories of behaviourism and cognitivism is that both treat knowledge and skills as unproblematic givens within the educational project. Implicit too is the idea that learning is essentially an individual activity. They also tend to assume a ‘transmission’ model of learning in which the teacher or trainer selects pedagogical strategies that enable the effective transmission to the learner existing knowledge and skill (Chappell (a) 2003 p. 9).

However, it is important to be aware that it is necessary for students to develop certain underpinning knowledge before they are able to construct their own knowledge through problem solving activities. Behaviourism supports the development of the underpinning knowledge. As reported in Waters (2005) many younger learners reveal that they want to be treated like adults, but their preference is for a close relationship with teachers, structured course work and organised assessment procedures. The view of these younger learners is the teacher’s role is that of expert and transmitter of knowledge and skill. (Choy and Delahaye, 2002 cited in Waters 2005, p. 14).

### **Constructivist and situated learning theories**

Other educational theorists such as Dewey, Piaget and Vygotsky have argued at length against the behaviourist and cognitivist notions of learning. These theorists see learning as the active construction of knowledge and skills by learners. Moreover this active construction (constructivism) involves learners individually and socially constructing meaning for themselves through experiences as they learn (Gonczi cited in Campus Review March 2002:7).

### **Constructivism**

Many researchers view e-learning as ideal for situated learning which includes learner and learning-centred educational processes. The roots of situated learning approaches to education and training are traceable to Dewey’s concepts of experiential learning and to problem based learning. The concept of situated learning is grounded in the principles of constructivist learning theory. It encompasses the belief that when

learning takes place within the context of realistic educational settings it is at its most efficient and effective. According to Naidu (2006), the philosophy of situated learning and the use of authentic learning tasks that serve to anchor and scaffold learning and teaching, are heavily dependent on the use of real-world or simulated educational activities (p.15.)

E-learning enables added variety to delivery options that over-ride the confines and constraints of conventional classrooms. For successful situational learning to occur attention must focus on the careful design of the learning experience rather than the presentation of the subject content or the technology. The concept of 'learning by doing' is at the heart of pedagogical designs that enable optimal use of e-learning. These pedagogical designs may include learning that is based on scenarios, goals, problem-solving, designing and role-playing. These are the foundation principles of constructivism and situated cognition (Naidu, 2006, p.17).

### **Socio-Constructivist Learning Theory**

A further refining of the constructivist theory is discussed by Hudson, Owen and van Veen (2006). It is their view that the design of a programme should be informed by a theoretical framework which is based on a socio-constructivist perspective of learning – collaboration. They explore what characterises effective pedagogical practice and student engagement in open and flexible e-learning environments. Their work focuses on uncovering what new prospects are presented by the technology for collaborative learning and support, and how purposeful engagement of autonomous and independent learners can best be facilitated. They consider the assumption that socio-cultural factors are essential in human development. Thus they find that one of the key factors in the successful implementation of computer supported collaborative learning is the need for the design and development of an appropriate social infrastructure.

Wilson and Stacey (2004), state that the revival of interest in Vygotskian social constructivism explains the effectiveness of claims that interactive e-learning enables the learners to actively construct their own perspectives which they can communicate to a small group. Using group conferences as a central communication space provides a means of

enabling the groups to socially construct knowledge. Group electronic discussion and sharing of resources creates an environment for actively constructing new ideas and concepts and enables effective learning. (p. 34)

Waters (2005) explains that constructivism is a major contributor to understanding contemporary directions of vocational education. Constructivist theories assert that learners actively assemble frameworks of understanding by using their existing knowledge to construct new ideas and concepts as new information is presented to them (Mahar & Harford, 2004, cited in Waters 2005, p. 13). As learners gain competence and understanding of the process, the teacher gradually reduces support and shifts the responsibility for learning to the student. Constructivist learning theories therefore adopt a more learner-centred approach to pedagogical practice. Learners are seen as active agents in their own learning not merely recipients of other peoples' knowledge.

### **Appealing to the Gen X and Y's**

E-learning may use multimedia to assist with the learning process. Jereb and Smitek (2006) found several factors have been attributed to the success of multimedia in helping people learn. Learning is assisted by dual coding (the use of more than one code in the learning process) as it allows a person to absorb information from the environment using two channels. It also reduces the cognitive load in a learner's working memory. Another advantage in using multimedia is that it assists in presenting information in a non-linear hypermedia format. The nature of hypermedia allows learners to view things from different perspectives, allowing users to choose information freely. Thirdly, they claim that traditional classroom lectures are less interactive than computer-based multimedia. Interacting appears to have a strong positive effect on learning. A further appealing feature of multimedia-based learning is flexibility. Multimedia programmes are flexible in terms of how they may be used at home, in classrooms, by individuals or small groups (Jereb and Smitek, 2006, p.16).

The lesson outlined earlier was adjusted to include constructivist learning theory along with more computer inclusive teaching and learning strategies. This blended learning approach would assuredly be more appealing to the Gen X and Y's.

In the section of the lesson that requires examination of the Australian Standards for Women's sizing, the students are directed to the on-line version of the Standards which is available through the RMIT library portal. The students are given some guided questions (a Webquest) which entails them looking at the Standards for information to answer the questions. The information uncovered builds an understanding of how the Standards have evolved, their reliability and use. The students are shown different examples of specification documents from various clothing companies. The contextualised use of Australian Standards information would be highlighted. The examples are stored in the learning management system (LMS) for referral, and students are asked to compare them to each other and identify common features. Once this process is completed they have a list of features that should be included in their individually produced documents.

Again the lesson is timetabled in a computer room so the teacher is able to demonstrate to the class, using a data projector, how to create a specification template in Excel. The same sort of information from the traditional lesson is presented. As extra support for the learners, desktop video captures of the process created in a program such as Macromedia Captivate are also placed in the LMS for referral.

After seeing a video demonstration of the method for measuring a garment, students collaborate to create a digital story made with Microsoft Photo Story 3. This involves them using a digital camera to take photos while the group reproduces the process of measuring the garment. The photos are placed into the (free) program which then creates a video story. The video may have audio added to it to explain the process of measuring. Another option is adding a text overlay on the photos. Students are also encouraged to use the LMS discussion board to ask and answer questions about issues that arise in the learning process (sharing information).

Instead of being shown how to create a measurement chart, learners are required to use an interactive video highlighting the features of Excel. Captivate could again be used to create the simulation. After completing this exercise, learners use the knowledge to develop their own template for a size specification based on their exposure to the examples.

In the new lesson format, students are obliged to insert an Illustrator image (rather than a scanned image) of a garment sketch from their range of styles developed in their design subject. Again there is an interactive video demonstration of this process, enabling them to follow the steps required to insert an image into their personal document.

The activities outlined encourage the learners to build their own knowledge and practice their skill in a simulated work place exercise – creating the size specification. Contextualising the exercises is an important aspect of the learning process as it helps the students' understanding. Chappell (2003b) explains that constructivist learning tasks are embedded in 'real-world' contexts. The latter lesson plan exhibits many of the characteristics of constructivism (collaborative group work, practical problem solving, the presentation of alternative perspectives, sharing information, reflective practice, and modelling) while using the computer for all activities. (p. 9) Although this lesson is more engaging for the learners, it may also present a challenge to teachers to present the class in this way. It is essential for staff to develop the required skills; therefore training programs must be offered to support them.

### **Conclusion**

The arguments to support the use of both behaviourist and constructivist approaches to learning and teaching have been outlined. However, according to Chappell (2003a), VET pedagogy draws on a mix of educational assumptions and theories about teaching and learning, and VET teaching and learning practices reflect this diversity. Indeed a mixture of teacher and learner-centred approaches are often variously combined in VET learning programs, which assumes that vocational learning outcomes are achieved through the transmission, acquirement and active building of vocational knowledge and skills by learners. As Waters (2005) suggests, good practice in VET is not tied to any one learning theory. It is more concerned with VET professionals being able to modify appropriate learning theories and teaching practices to different objectives and settings and recognising that students have their own learning styles and can elect to meet their needs through a choice of materials (p. 13). The current generations live in a visual world and are characterised by more kinaesthetic, collaborative and interactive learning styles than the baby boomers. E-learning is well

suiting to today's generations who are multi-modal and respond to a communication style that engages multiple learning channels.

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