Generation Y students: Appropriate learning styles and teaching approaches in the economic and management sciences faculty

P. L. Wessels  
Risk Management and Information Systems  
Stellenbosch University  
South Africa  
e-mail: plw@sun.ac.za

L. P. Steenkamp  
Information Systems  
Stellenbosch University  
South Africa  
e-mail: lsteenkamp@sun.ac.za

Abstract
Generation Y students (born after 1982) have developed a different set of attitudes and aptitudes as a result of growing up in an IT and media-rich environment. This article has two objectives: firstly to discuss the learning styles preferred by generation Y students in order to identify the effect of these preferences on tertiary education in South Africa, and secondly to discuss strategies that lecturers in the economic and management sciences faculty can employ to address these preferences. It was found that Generation Y students prefer team-work, structure, interactivity and image-rich environments. From an exploratory survey it was found that a vast number of students at South African tertiary institutions have been exposed to technology while growing up to such an extent that they can be classified as Generation Y students. A critical learning outcome approach in designing, delivering and assessing courses is suggested for interacting with Generation Y students in the classroom to address many of the preferences of Generation Y students.

INTRODUCTION
There is increasing evidence that students have developed a different set of attitudes and aptitudes as a result of growing up in an IT and media-rich environment. It is suggested that these students, who are characterised by their familiarity with and reliance on information and communication technologies, are part of the cohort of students currently studying at tertiary institutions. It is expected that more of these individuals will enrol for programmes in the economic and management sciences faculties in the next few years. Studies have shown that there are identifiable characteristics and special needs of generations that influence how they learn and...
suggest that in order to be effective, lecturers must adapt to address the learning preferences of these students.

The group of individuals born after 1982 have grown up with extensive exposure to information technology. They have been labelled ‘millenials’ (Howe and Strauss 2000), ‘the net generation’ (Tapscott 1998), ‘digital natives’ (Prensky 2001) or ‘generation Y’ (Kennedy et al. 2006). For the purpose of this article, the term ‘Generation Y’ will be used to refer to this generation of students. Generation Y students have spent their entire lives up to now, surrounded by and using computers, videogames, digital music players, cell phones, and almost all of the other toys and tools of the digital age. As a result of this ubiquitous environment and the sheer extent of their interaction with it, Generation Y students think and process information in a way that is fundamentally different from their predecessors (Prensky 2001). The learning preferences ascribed to Generation Y students are increasingly true for students across a wide range of ages, driven not only by the technologies they grew up with, but also by the tools and media they use every day. For example, by its nature, the Internet rewards comparing multiple sources of information that is individually incomplete and collectively inconsistent. This induces learning based on seeking, sieving and synthesising, rather than on assimilating a single ‘validated’ source of knowledge as from books, television or a professor lecturing (Dede 2004, 4). While this may provide great advantages in areas such as the ability of students to use information technology and to work collaboratively, it may cause a disconnect between their expectations and the learning environment they find at tertiary institutions. Prensky (2001) argues that the single biggest problem facing education today is that lecturers, who speak an outdated language (that of the pre-digital age), are struggling to teach a population that speaks an entirely new language.

Most research on the learning styles of Generation Y students has been conducted in first world countries where most students are exposed to technology from an early age. In South Africa, which is classified as a developing country, some students would have been exposed to technology from an early age and could therefore be classified as Generation Y students. However, students growing up in poorer environments may have had no or limited exposure to technology. This may cause the population of students at tertiary institutions in South Africa to have distinctive characteristics of various generations with different learning preferences. The first problem lecturers face is to know what proportion of students currently enrolled at South African tertiary institutions have been exposed to technology to such an extent that they can be classified as Generation Y students. It is envisaged, however, that the cohort of students enrolling for programmes will gradually include more and more Generation Y students as more students are exposed to technology in schools and at home. The second problem lecturers face is to determine how this exposure to technology from an early age affects their students’ preferred style of learning. If lecturers are aware of these preferences, they should identify and implement strategies that could address the learning preferences of their students.
PROBLEM STATEMENT
This article has two objectives: firstly to discuss the learning styles preferred by generation Y students in order to identify the effect of these preferences on lecturers in the economic and management sciences faculties in South Africa, and secondly to discuss strategies that these lecturers can employ to address the preferences. In February 2008 an exploratory survey was done among the cohort of students in the Faculty of Economic and Management Sciences at a South African university to determine the percentage of students that can be classified as Generation Y students. This would give lecturers an indication of the extent of Generation Y students enrolled in tertiary education in South Africa.

In the economic and management sciences faculties, lecturers are typically faced with big class groups (with class sizes in excess of 150 students) where a vast number of learning outcomes require students to be able to apply their knowledge to solve typical practical business problems. In the last part of this article a number of strategies that these lecturers can employ to accommodate the learning preferences of this new generation are identified and discussed, taking into account the specific problems encountered when teaching big classes, where practical application is a focus area and stated learning outcome.

THE EFFECT OF TECHNOLOGY ON STUDENTS’ LEARNING STYLES
There is a marked contrast between the learning styles of the various generations who grew up with different technologies (Tapscott 1998; Howe and Strauss 2000; Oblinger 2003). Television was the dominant medium that shaped the characteristics of the Baby Boomers (born 1946 to 1964). Generation X (born 1961 to 1981) experienced a marked transformation of societal values during their formative years. They have reacted against excesses of idealism by becoming tough, pragmatic and individualistic. As a generation they tend to be sceptical, pragmatic, and unimpressed with authority. They are adaptive and balanced and are most comfortable with casual communication (Zemke, Raines and Filipczak 2000). Computers and the Internet are seen as the crucial technological force determining the characteristics of those born after 1982 (Dede 2004, 3). Television-shaped students (Generation X) are described as passive observers, assimilating a single version of ‘truth’, while Internet-shaped students (Generation Y) are portrayed as active seekers of information, judging among competing opinions. Generation X students are represented as more subservient to hierarchical authority than Generation Y students, who in contrast are seen as more independent, intellectually open, innovative, curious and self-reliant (Dede 2004, 3).

Current academic literature attributes a number of very specific characteristics to Generation Y students. Generation Y students are described as confident, independent and individualistic, self-reliant and entrepreneurial (Martin 2005) and at the same time socially active, collaborative, team-oriented and used to having structure in their lives as a result of the parenting they have received (Tapscott 1998; Shih and Allen 2007). Despite being independent they are seen as being emotionally
needy and consequently constantly seeking approval and praise (Crumpacker and Crumpacker 2007). In terms of work they are capable of multi-tasking quickly, are results-oriented and have an appetite for work and pressure (Shih and Allen 2007).

Because of the prevalent use of technology, Generation Y students will process information differently and will approach academic research differently. Through the use of the Internet, Generation Y students have access to virtually any information they might want, from a very young age. Because they view unregulated information, they have a problem in determining whether what they are reading is valid or accurate (Roberts, Foehr, Rideout and Brodie 1999).

Generation Y students are said to prefer receiving information and feedback quickly; to be adept at processing information rapidly (Prensky 2001); to prefer multi-tasking and non-linear access to information (Ashman 2002, 8); to have a low tolerance for lectures (Baron and Maier 2005, 59); to prefer active rather than passive learning (Brown 2000); to rely heavily on communication technologies to access information and carry out social and professional interactions (Mitchell 2003). It does not necessarily mean that these students want more technology in their education as they use this extensively in their personal lives. It is also acknowledged that not all students in higher education are Generation Y students, and that age may be less important than exposure to technology (Oblinger and Oblinger 2005).

Generation Y students therefore deal with information differently from previous cohorts: ‘[T]hey develop hypertext minds, they leap around’ (Prensky 2001). A linear thought process is much less common. They have the ability to piece information together from multiple sources. However, research suggests that 60 per cent of homework time on the computer overlaps with secondary activities (Foehr 2006, 20). This multitasking exists as a Generation Y student characteristic despite evidence that the concentration and retention capacity of the brain is compromised when more than one activity is introduced (Just et al. 2001).

Generation Y students have grown up with widespread access to technology and are able to intuitively use a variety of IT devices and navigate the Internet. They are more visually literate than previous generations and are able to express themselves using images. Because of the availability of visual media, their text literacy may be less well developed than previous cohorts. Milliron (2008, 415) reports that in her study conducted in the USA, she found clear evidence that students’ preferences are not well aligned with their long-term interests, and that the majority of students who graduate from colleges lack the functional skills historically associated with a bachelor’s degree. Reading and focus are vital aspects of life-long learning and highly correlated with professional success. In the USA it has been reported that only 31 per cent of students with bachelor degrees demonstrate a literacy level adequate to compare viewpoints after reading two newspaper editorials (NEA 2007, 10). The deterioration is worst among Generation Y students, with two-thirds lacking ‘active reading habits’. Even when reading does occur, the quality of the reading shows a general decline as it is often combined with other media, resulting in ‘less focused engagement with a text’ (NEA 2007, 10).
The generic preferences of Generation Y students can be summarised as follows:

• They prefer to learn and work in *teams* where a peer-to-peer approach is common, with some finding peers more credible than lecturers when it comes to determining what is worth paying attention to.

• They are very achievement-oriented with a preference for *structure* rather than ambiguity.

• They are oriented toward inductive discovery or making observations, formulating hypotheses, gaining an understanding of the rules and craving *interactivity*. The rapid pace with which they like to receive information means they often choose not to pay attention if a class is unengaging, not interactive or too slow.

• They are more comfortable in *image-rich* environments than with text. They will refuse to read large amounts of text, whether it involves a long reading assignment or lengthy instructions. They prefer doing things, not just thinking, listening or talking about things.

• They prefer working on things that matter – such as addressing environmental concerns or community problems.

In the next part of this article, an exploratory survey will be conducted to determine the number of Generation Y students currently enrolled at South African tertiary institutions.

**NUMBER OF CURRENT STUDENTS AT UNIVERSITIES WITH GENERATION Y CHARACTERISTICS**

To determine the number of Generation Y students currently studying at economic and management sciences faculties in tertiary institutions in South Africa a survey was conducted in February of 2008 using newly enrolled economic and management sciences students at the University of Stellenbosch. The survey was web-based and students were encouraged to complete the survey in their own time. Two follow-up e-mails were sent as reminders to encourage students to complete the survey. The survey consisted of a number of biographical questions, questions about the usage of and exposure to information systems prior to commencing their studies at the university, as well as a number of five-point Likert-type questions that would evaluate the confidence students have when using and interacting with computers and other new technologies.

To determine whether respondents could be classified as typical Generation Y students, students were evaluated on the extent of their interaction with technology as well as the confidence they exhibit when interacting with technology. A total of 1 370 newly enrolled students were invited to participate in the survey. Three hundred and nineteen (319) usable responses were obtained from students completing the survey, resulting in a response rate of 23.3 per cent.
To determine the number of students that had been exposed to technology while growing up, a number of questions were asked relating to their usage of various computer applications. They were asked whether they have access to computers at home and whether they regard themselves as being comfortable interacting with new technology (e.g. cell phones, DVD players, etc.). The results are depicted in Table 1.

Table 1: Extent of interaction with technology

<table>
<thead>
<tr>
<th></th>
<th>N = 319</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use computers regularly for a wide variety of applications (including internet, e-mail, games, etc.)</td>
<td>256</td>
<td>80.3</td>
</tr>
<tr>
<td>Feels comfortable interacting and using new technology (e.g. cell phone, iPods, etc.)</td>
<td>281</td>
<td>88.1</td>
</tr>
<tr>
<td>Had access to a computer at home (while growing up)</td>
<td>248</td>
<td>77.7</td>
</tr>
<tr>
<td>Took a computer course at school</td>
<td>79</td>
<td>24.8</td>
</tr>
</tbody>
</table>

More than 88 per cent of the respondents indicated that they feel comfortable to interact with and use new technology, with more than 80 per cent of respondents using a wide range of information technologies and applications on a regular basis. About 78 per cent of respondents had access to a computer at home while growing up. From this initial analysis, it is clear that the majority of respondents have used technology and interacted with information systems while growing up. At least 80 per cent of the respondents could be classified as potential Generation Y students based on the extent of their exposure to information technologies.

A number of 5-point Likert-type questions were asked to determine the level of confidence students have when interacting with and using technology. The results of three of these questions (one of which was reverse coded) were combined to obtain an overall score that measured their comfortableness when interacting with information technologies. The lower the value of this variable, the more uncomfortable students are when interacting with technology. The internal consistency of the three combined questions had a Cronbach alpha of 0.78. The overall score of 4.17 indicated that the majority of respondents regarded themselves as strongly comfortable when interacting with technology, as illustrated in Figure 1.
On a scale of 1 to 5, where 1 indicates that respondents are uncomfortable in using computers and 5 indicates that they are comfortable, 85 per cent of the respondents indicated that they feel comfortable using a computer (scores of more than 3).

To determine whether there any significant differences in the extent of the respondents’ usage of information technologies because of gender, ethnicity and home language, the results in Table 1 and Figure 1 were analysed in terms of these indicators.

**Gender**

The results for male and female students are summarised in Table 2.

**Table 2: Interaction with technology compared in terms of gender**

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=179</td>
<td>N=140</td>
<td></td>
</tr>
<tr>
<td>Use computers regularly for a wide</td>
<td>84.9%</td>
<td>74.3%</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>variety of applications (including</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>internet, e-mail, games, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feels comfortable interacting and</td>
<td>93.3%</td>
<td>81.4%</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>using new technology (e.g. cell</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>phone, iPods, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had access to a computer at home</td>
<td>74.9%</td>
<td>81.4%</td>
<td>Not</td>
</tr>
<tr>
<td>(while growing up)</td>
<td></td>
<td></td>
<td>significant</td>
</tr>
<tr>
<td>Took a computer course at school</td>
<td>31.3%</td>
<td>16.4%</td>
<td>&lt; 0.01</td>
</tr>
</tbody>
</table>

Percentages are calculated as number of responses out of the total per category.
Male students were more likely to have taken computer studies at school (31.3% compared to 16.4%). They also indicated that they used computers much more widely than female students (84.9% compared to 74.3%). Male students are also more confident in using new technology (93.3% compared to 81.4%). While more female respondents indicated that they had access to a computer at home (p not statistically significant), male students use computers far more and for longer than female students, as evidenced in Figure 2.

Figure 2: Computer use analysed per gender

Male students (overall score of 4.33) consider themselves significantly more self-confident and comfortable in interacting with technology than female students (overall score of 3.96), as illustrated in Table 3.

Table 3: Extent of difference between different genders

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Mann-Whitney U</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>New technology makes me feel uncomfort-</td>
<td>4.33</td>
<td>3.96</td>
<td>0.79</td>
</tr>
<tr>
<td>able (comfortableness score)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have a lot of self-confidence when it</td>
<td>2.31</td>
<td>2.86</td>
<td>1.06</td>
</tr>
<tr>
<td>comes to working with computers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If given the opportunity to use a</td>
<td>4.02</td>
<td>3.80</td>
<td>1.17</td>
</tr>
<tr>
<td>computer, I am afraid that I might</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>damage it in some way</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am not in complete control when I use</td>
<td>3.66</td>
<td>3.20</td>
<td>1.16</td>
</tr>
<tr>
<td>a computer</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Likert-type questions were rated on a scale of 1 to 5, where 1 = strongly agree and 5 = strongly disagree.
In summary, although female students use computers less than male students and feel less confident and comfortable interacting with technology as compared to their male counterparts, it is reaffirmed that the majority of students are comfortable and interact regularly with information technology. This supports the initial deduction that at least 80 per cent of respondents could be classified as Generation Y students. Male students tend to be more comfortable interacting with technology and therefore more male students will exhibit Generation Y characteristics.

**Ethnicity**

The comparison between white (N=234) and other ethnic (N=62) students did not show many significant differences between them (15 respondents did not answer the question on ethnicity). The overall comfortableness score for white students (4.18) was slightly higher than that of other ethnic students (4.05). This was an unexpected result as it was expected, in view of their historical situation, that students from other ethnic groups may be less exposed to computers than their white counterparts and therefore less comfortable in interacting with technology.

Some differences that are statistically significant are the following:

- Other ethnic students are more likely to use computers for games than white students (24% and 12% respectively, p<0.05).
- More white students indicated that they use computers for a wide variety of applications than students from other ethnic groups (85% and 68% respectively, p<0.01).
- More white students have computers at home (88% and 50% respectively, p<0.001).
- Given that fewer students from other ethnic groups have access to computers at home, white students spent more hours interacting with technology (p<0.01) (refer to Figure 3).
Language
The results of the questions were also analysed in respect of home language by comparing the answers of Afrikaans- (N=185) and English-speaking (N=109) respondents. The overall comfortableness score of English-speaking students (4.38) was significantly higher than that of Afrikaans-speaking students (4.05). Other statistically significant differences between these two groups are as follows:

- Afrikaans-speaking students were more likely to use computers for games and entertainment than English-speaking students (18% and 8% respectively, p<0.05).
- More English-speaking students indicated that they use computers for a wide variety of applications than Afrikaans-speaking students (88% and 76% respectively, p<0.05).
- English-speaking students were also more confident in using new technology than Afrikaans-speaking students (95% and 84% respectively, p<0.01).
- English-speaking students use computers slightly more than Afrikaans-speaking students (Mann-Whitney U=0.07).
- In spite of the above findings, Afrikaans students are more self-confident in their use of computers than English students (averages 2.7 and 2.3 respectively, Mann-Whitney U<0.01).
Summary of results

The exploratory survey indicated that 80 per cent of the respondents frequently interact with information technology using a wide variety of applications (i.e. email, Internet, word processing, games and entertainment). More than three quarters (78%) of the respondents have access to a computer at home. In total, 89 per cent of the respondents feel comfortable using and interacting with new technology. Only 15 per cent of the respondents indicated that they use computers for less than two hours per week, while the majority (55%) use computers from between two and ten hours per week. Of the respondents, 9 per cent use computers for more than 20 hours per week. From this exploratory survey, it can be concluded that at least 80 per cent of the respondents grew up with and interacted with technology to such an extent that they could be classified as Generation Y students. Only minor differences were detected when analysing the responses by gender, race and language. The overall score for comfortableness for all students (4.17) affirms the initial results (see Table 1) that concludes that more than 80 per cent of respondents can be classified as Generation Y students. English-speaking white male students tend to be very comfortable in interacting with new technology and most will exhibit characteristics of Generation Y students.

From this exploratory study it is clear that a vast number of students in the economic and management sciences faculties at South African tertiary institutions have been exposed to technology while growing up to such an extent that they can be classified as Generation Y students. Because Generation Y students process information differently than previous generations, this may impact their learning styles and preferences. In the next section the impact of these learning styles and preferences on educationalists will be discussed and strategies proposed on how it can be addressed.

IMPACT OF LEARNING STYLES FOR EDUCATIONALISTS

Research into their experiences as students in higher education suggests Generation Y students enter university with very different learning backgrounds, experiences, preferences, attitudes and skills sets. This situation calls for different pedagogies and learning style strategies, together with new forms of learning environments (Shih and Allen 2007, 96). Generation Y students require structure, both within the classroom and in relation to learning administration and infrastructure, with experiential learning seen as the dominant pedagogy with ‘hands-on and interactive assignments and in class activities’, ‘team-work’ and ‘collaborative presentations’ resonating well with them (Shih and Allen 2007, 98). Alongside structure, teamwork and experiential activities, Jonas-Dwyer and Pospisil (2004) add technology, entertainment and excitement to Generation Y’s learning and communication preferences on campus, whilst Partridge and Hallam (2006) argue that curricula should include real world activities and perspectives, and that they should be customisable and flexible.
Typically, classes in economic and management sciences courses in South Africa are large (in most instances more than 150 students per classroom). Lecturers face major challenges in marrying the learning preferences of Generation Y students (as described in this article) with the demands of lecturing big class groups. For example, interactivity and discussions in big class groups generally tend to become disorderly. The learning outcomes required from most economic and management sciences courses demand not only that students acquire the conceptual knowledge of the module but that they are also able to apply their knowledge in solving typical practical business problems. Strategies will be discussed next to illustrate how lecturers in the economic and management sciences disciplines can adapt their approach to lecturing in order to accommodate the preferences of Generation Y students, taking into consideration the problem of big class groups and the need for students to be able to apply their knowledge solving business problems.

STRUCTURED COURSE DESIGN AND DELIVERY

One of the most effective ways lecturers can ensure successful teaching despite large classes is by offering well designed courses. This requires that they provide students with a clear picture of the structure of the course, and that it is delivered and assessed in line with this structure. Kimmel (1995, 313) suggests that to emphasise structural relationships, lecturers should identify no more than 12 central concepts or principles, and then organise the course activities to constantly reinforce the understanding of these concepts. When designing a course, lecturers could employ a critical learning outcomes approach to ensure that a clear structure is developed (Wessels 2009) so that both lecturers and students can focus on essential issues and topics.

The critical learning outcome approach requires that lecturers determine the main objective of the course, and resulting from this objective, identify the critical learning outcomes that will ensure that the main objective of the course is reached. For each of the critical learning outcomes, lecturers need to identify the critical elements and knowledge that are required to achieve the stated learning outcomes. Lastly, a conceptual framework of the course is developed that incorporates all the critical learning outcomes that were identified. This approach in structuring the course will encourage lecturers to focus on the critical knowledge and understanding required when delivering the syllabi in the classroom as well as on explaining core principles and how they relate to the learning outcomes, rather than repeating ‘textbook theory’. Lecturers should therefore adopt a top-down approach in delivering the course by continually focusing on the overall learning outcomes required and clearly linking each topic to the overall learning outcome as identified. Thus students will have a clear structure to direct them to the critical knowledge and understanding they need to master to achieve the required learning outcomes. This approach will enable them to understand how each topic/unit fits into the broader picture and encourage them to adopt a deep approach to learning with the emphasis on understanding rather than memorising.
Changes in assessment practices are also necessary. Examinations should include short cases or conceptual questions that require students to reflect on these core issues. In adopting this holistic approach to the development of syllabi, lecturers would provide students with a conceptual framework so that they can understand and focus on the critical issues of that course. This approach is in line with Biggs (2003) that argue for a systems approach to designing university learning environments to ensure that understanding aims, teaching, assessment and other aspects of the learning environment, all act synergistically to create a constructive alignment. Presentation of content will be strengthened by identifying troublesome knowledge, which students find difficult to understand (Perkins 1999), and threshold concepts that serve as ‘portals’ to developing a deeper understanding of the subject, opening up a new and previously inaccessible way of thinking about something (Meyer and Land 2002).

**USE OF IMAGES VS. TEXT**

Visual modes of learning are especially important for Generation Y students, who grew up on television, video games, computers, the Web, and other increasingly sophisticated multimedia presentations (Manuel 2002, 201). Related to Generation Y students’ orientation toward images is a preference for holistic processing and nonlinear, nonsequential modes of learning (Manuel 2002, 202). They need to see the big picture when being introduced to concepts and procedures. They have to see a picture first; then one can tear apart the picture into components and test students on their ability to rebuild the picture. Most lecturers, in contrast, are quite comfortable being told to do step 1, then step 2, etc. without first being told the outcome or purpose of these steps.

If lecturers adopt the critical learning outcome approach in designing and delivering courses, each lecture would start with the overall conceptual framework of that course consisting of visual symbols rather than a linear course outline. For example, in Management Accounting the conceptual framework as depicted in Figure 4 was developed. The process is described below.
Each lecture starts with the lecturer briefly explaining the overall conceptual framework of the course. The lecturer can then ‘click’ on a specific element of the framework and ‘drill down’ to more specific knowledge elements that will form the main focus of the lecture. Students will be able to gain a visual understanding of how the specific knowledge element fits into the bigger picture of the course outline and can therefore develop a visual mind map of the lecture that will enhance their understanding of the specific topic. For example, if the lecturer clicks on operational decision-makers in Figure 4, the conceptual framework should display the next level of the course design (specific elements) as displayed in Figure 5.

**Figure 4:** Example of a conceptual framework for Management Accounting

Source: Wessels and Roos (2009)
USE OF REAL-WORLD ISSUES / EXPERIENTIAL LEARNING

Learning can be viewed as an active process in which the student develops his or her own understanding by assembling facts, experience and practice (Oblinger 2004), especially in subjects or areas of study where practical application is paramount. Learning information in a context of use enables people to move beyond rote learning and acquire the competence to use and re-use knowledge in new situations. The ability to transfer learning from one situation to another and solve problems is critical for competence (Oblinger 2004, 7). The Internet has led to the development of a new type of multimedia or information literacy. Understanding is no longer based primarily on text; many students combine an intuitive understanding of text and image resulting in information literacy. This information literacy parallels other shifts in how one approaches learning, such as moving from an environment of being told or authority-based learning to one based on discovery or experiential learning (Brown 2000). By adopting the critical learning outcome approach in designing and delivering courses, the focus will move away from teaching text to directing students to understand the conceptual framework of that course. However, the lecturer should ensure that students not only read the specific knowledge elements as contained in the prescribed textbook but also research the topic wider by consulting other sources before the topic is discussed in the formal classroom session. If they understand the conceptual framework and the various critical elements that make up the framework, they will then be able to apply it to any new scenario or discuss it from various perspectives, thereby encouraging interactive learning. This approach should therefore encourage a learning-to-learn environment where lecturers can expect students to apply different scenarios and/or techniques and understand the key issues because of their understanding of the critical components of the course.
INTERACTIVE LEARNING / PEER LEARNING

The traditional lecture has long been recognised as a teaching method best suited to the learning styles and preferences of only a few. The average retention rate for materials presented in lectures is 5 per cent, compared to 50 per cent for group discussions, 75 per cent for practice by doing, and 90 per cent for teaching others (Miller 1996). Traditional lectures are an especially ineffective instructional technique for Generation Y students. Opportunities for peer learning are incredibly important for Generation Y students (Manuel 2002, 208). The challenge for lecturers is to try to accommodate learning styles whilst catering to changing expectations in a broader sense. Technology provides a vehicle by which one can address changing needs, but from their research Becker, Kehoe and Tennent (2007) conclude that students still wish to engage in a meaningful way with those facilitating their learning and with their fellow students. Using the critical learning outcome approach in delivering lectures will force lecturers to move away from the traditional text-book lectures to an environment where they become actual facilitators of learning by focusing on giving students the necessary tools to teach themselves. Students can be required to research a specific knowledge element or technique by consulting multiple sources of knowledge or reflect on the importance of specific points of view discovered through their knowledge search. They can do this on their own or in groups. As the course progresses, students should also develop and expand on the conceptual framework (for example by using hyperlinks) as more knowledge elements are covered. This should encourage interactive learning.

USE OF TECHNOLOGY

Australian research has highlighted that students regard the use of audio/visual recording of lectures and the virtual classroom as of greater significance than lectures (Baron and Maier 2005, 59). Students want educational technologies that meet their learning preferences and active lifestyles to be used more effectively and consistently. Faculty, on the other hand, are concentrating on using electronic features that will assist them administratively – utilising innovative features for enhancing learning is a relatively low priority.

Educational technologies allow for increased mobility in that students can access learning materials and communicate and collaborate online at any time and in any place. Students want image-rich environments, but they do not want to waste time and need information quickly. Although they want technology to be used more consistently and effectively, they also desire the face-to-face social interaction that campus life brings.

Muir (2001) argues that although the traditional content of readings, lectures, discussion boards and the like are valuable and should be included, lecturers need to develop different activities to cater for different learning styles, and pedagogical strategies need to be incorporated into each element so that all learning styles are
addressed. As lecturers use technologies, it is important to consider the relationships between technology and teaching strategies so that better courses can be designed (Becker et al. 2007, 107).

Various other strategies could be employed by lecturers, but if lecturers in economic and management sciences modules focus on structuring their courses clearly and delivering and assessing them in line with this structure, a number of the preferences of Generation Y students would be addressed as discussed in this section.

CONCLUSION

Generation Y students have the aptitude to become accustomed instinctively to a range of information technology procedures, even though their understanding of the technology may lack depth (Oblinger and Oblinger 2005). However, little attention has been given to the characteristics and learning styles of Generation Y students (Baron and Maier 2005). An effort should be made to ensure that the learning environments and technologies being utilised address Generation Y students’ preferred ways of learning in order to bring about effective higher order learning.

Research into the effect of technology on the learning preferences of Generation Y students has concluded that these students have a positive outlook, especially regarding technology; are oriented toward images, not linear text; have a desire for customised experiences and choices; have low thresholds for boredom and an unwillingness to memorise text; prefer multi-tasking; and prefer active learning (even better when it is peer learning).

Oblinger and Oblinger (2005) emphasise that these students do not necessarily want more technology in their education, because they use it extensively in their personal lives. It is also acknowledged that not all students in higher education are Generation Y students, and that age may be less important than exposure to technology.

‘Traditional’ students often say they came to university to work with faculty and other students, not to interact with them online. Older students tend to be less interested in the social aspects of learning; convenience and flexibility are much more important (Entwistle and Peterson 2004). The majority of Generation Y students prefer a moderate amount of IT in their classes. Students appreciate the convenience provided by online syllabi, class readings, and online submissions of assignments. They also want face-to-face interaction. The social nature of Generation Y students, as well as their desire for experiential learning, implies that interaction is an important technique for lecturers to employ. The importance of interaction is not new; learning science has consistently demonstrated that students learn more when they interact – with material, each other and with faculty. Students do best when they actively construct their own knowledge. The short attention spans of Generation Y students also point to interaction as an important component of instruction. They crave interactivity – an immediate response to their each and every action.
It is easy to assume that lecturers understand their students, but there is often a difference in perspective between Generation Y students and lecturers. The aim of this article was to highlight the learning styles preferred by Generation Y students and to identify strategies lecturers in the economic and management sciences faculty could use to address these preferences. Details were given of an exploratory survey conducted at a South African university to determine the number of Generation Y students currently enrolled in the economic and management sciences faculties at South African institutions. It was deduced from the study that more than 80 per cent of these respondents could be classified as having characteristics of Generation Y students. Lastly, a number of strategies were discussed to illustrate how lecturers can accommodate the learning preferences of this new generation, especially in the economic and management sciences environments with big class groups where it is not always easy to adopt typical strategies identified in literature and with learning outcomes that require students to apply their knowledge to novel business situations. By adopting a critical learning outcome approach in designing, delivering and assessing their courses, these lecturers would ensure that a number of critical preferences of Generation Y students are addressed.

Educating students is the primary goal of universities. However, reaching that goal depends on understanding those students in order to create learning environments that optimise their strengths and minimise their weaknesses.

REFERENCES


