



# Learning and the Net Generation: Are LAS advisers helping or hindering?

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**Abstract:** *While university teachers are being exhorted to rethink their teaching in the context of diversity (Northedge, 2003), in this paper it will be argued that LAS practitioners need to reassess aspects of our practice in the context of new and emerging technology. Is the lecture still central and symbolic to the culture of learning at university (Benson, 1994) or are listening and note-taking antiquated means of gaining information (Ling, 1993)? Is note-taking merely a time-honoured institution (Todd, 1996) or is note-taking central to academic literacy (Badger et al 2001)? What impact is the new technology having on learning and teaching? To what extent are we complicit in the perpetuation of ineffective means of teaching and learning? In examining these questions it will be argued that we are in danger of being left behind by the new technology which may be making some of our current practices irrelevant to students' needs.*

**Key words:** *critical EAP, technology, learning, lectures, listening, Net Generation, note-taking*

## Introduction

In the spirit of the conference sub-title 'critiquing and reflecting' this paper aims to focus on our role in teaching and learning in higher education in order to stimulate

discussion about our work and its future. This paper is based on twenty years of experience as an academic and LAS adviser, and influenced by work in critical EAP (Benesch, 2001), critical pedagogy (Pennycook, 1999), reflective teaching (Brookfield, 1995) and writing pedagogy (Lea and Street, 1998; Lea and Stierer, 2000). It is essential for LAS advisers to develop the habit of critical reflection as it enables us to 'question and shape' (Benesch, 2001: xvii) the education we offer, and to turn a 'critical and sceptical eye towards assumptions and ideas that have become naturalized' (Pennycook, 1999:343). According to Brookfield (1995:1-27), critical reflection assists us among other things to question the 'common sense' of our work, make informed decisions, and develop the rationale for our practice. As Haggis (2004) has pointed out, notions of increased access, the knowledge-based economy, and lifelong learning have focussed attention on teaching and learning processes in higher education, and the emphasis in this paper is on changes in the undergraduate cohort.

Lea and Street (1998) distinguish between three inter-related perspectives on writing at university: the study skills approach, the academic socialisation approach, and the academic literacies approach. The study skills approach sees writing as a technical skill at which students are deficient, and programs based on this approach emphasise assisting students to correct surface errors. The academic socialisation approach sees writing as the acculturation of students to academic discourse, and programs focussing on this approach introduce students into the new disciplinary cultures. The academic literacies approach incorporates both the study skills and academic socialisation approaches but sees academic literacy as social practice and the student's task as the negotiation of often conflicting literacy practices. Both the academic socialisation and the academic literacies approaches recognise that students bring their own expertise to the new study environment. This paper will argue that, because of generational differences between university students and staff, LAS advisers may not be fully aware of the expertise the students bring with them to university, and we are thus at risk of hindering rather than helping our students.

It is vital for us to take stock of our role in higher education because in Australia, Britain and the US, the sector is going through a process of unprecedented change.

As Carew (2004:1) points out in reference to the American context, the current education system was created at the end of the 19th century when 90% of the population left school after Grade 8 and at a time when the industrial revolution was replacing an agricultural economy. As Lea and Stierer (2000:3) point out, the student body is increasingly linguistically and culturally heterogeneous, student numbers are expanding, new routes to higher education are becoming available, interdisciplinary and vocationally-oriented programs are increasing, and assessment methods are diversifying. Although it is usual to think of the increasing diversity of the undergraduate cohort in terms of ethnic background, age, and social class (Northedge, 2003), according to Hartman, Moskal and Dzubian (2005: 6.1) the greatest challenge facing higher education today is for staff to understand the 'Net Generation' learner and through this understanding provide the learning environments, services, and facilities needed to help these students achieve their potential.

## **Who are the Net Generation?**

The Net Generation (also known as Generation Y (Manuel, 2002) or Millennials (Howe and Strauss, 2000; Casey, 2004)) refers to those young people born between 1982 and 1991. These young people are now attending university, where they are being taught mainly by baby boomer lecturers and advisers, born between 1946 and 1964. Casey (2004:13) puts the problem succinctly as follows:

An aging, predominantly Baby-Boom professoriate now finds their former Generation X students finishing PhDs and returning to college as faculty. Occupying the current student role are the so-called Millennials (or Generation Y, to some).

Before turning to an examination of some of the challenges the Net Generation poses for our work, some of the research relating to our 'common sense' assumptions about learning and teaching in higher education will be considered. The academic lecture and note-taking will be discussed as they have long been considered central to learning and teaching at university, and therefore to our work.

## **The centrality of the lecture**

The academic lecture is a teaching technology invented over 2500 years ago (McLeish, 1976:252), and although Hartley and Davies (1978) called for research into the behaviour of students in authentic academic lectures nearly 30 years ago, there has been surprisingly little, possibly because lectures are so taken for granted as being vital to teaching and learning at university. Benson (1994: 196) has noted that 'listening to lectures constitutes a central and symbolic act in the culture of learning' but there are a number of indications that it is time that the privileged position of the academic lecture in learning and teaching at university is questioned.

Hyde and Flournoy (1986) have shown that it is quite possible for students to learn the material necessary to pass subjects without attending lectures, which hardly indicates that lectures are central to learning. Lectures have long been a source of complaint by students (Ramsden, 1997) and figures extrapolated from a study by Mulligan and Kirkpatrick (2000) indicate that 66% of ESB students and 91% of NESB students did not believe that they understood their lectures very well. At a time when enrolments are becoming increasingly diverse, these figures should be a concern to all involved in higher education.

A naturalistic case-study of learning from lectures by international students (McKnight, 1998) showed that the recall of key information presented in lectures by NESB international students was quite limited, and students often knew less about the key information after the lecture than before it, indicating that the input from the lecturer had impeded what little they already knew. However, students who appeared to have recalled least from the lectures as measured by weekly tests of lecture content nevertheless succeeded in passing the subject.

In a South African survey of over 1000 students who attended lectures, Irwin, Euvrard, Radloff and Boughey (2002: 20) found that 59% of their respondents missed up to three lectures per week for a variety of reasons and over 25% felt that the lectures were of no value or were 'so boring as to be not worth attending'.

Research such as that cited above appears to indicate that lectures are not central to learning, but their persistence may be explained in other terms.

## **The value of note-taking**

It has been noted that students value well-presented lectures because they present the opportunity for students to take notes (Irwin, Euvrard, Radloff & Boughey, 2002) and this is supported by psychological theory. From the information-processing point of view (Clark & Clark, 1977) note-taking from lectures has been seen as important for learning as it serves two functions: encoding and storage. The encoding function is said to be important since the process of interpreting the input and creating notes helps students to attend to and remember the information presented, and the storage function is important as the notes provide a written record for review and revision at a later date. This is intuitively appealing to LAS advisers, but although the utility of note-taking from lectures appears to have achieved the status of a 'naturalized idea' (Pennycook, 1999: 343), there is a body of research which indicates that the relationship between note-taking and learning may not be as clear-cut as is often thought.

Dunkel (1985) argued that notes improve learning because they enable review and revision of content. However, Clerehan (1992) has shown that the notes taken by second language students were not useful for either encoding or storage purposes. While non-native speakers are particularly disadvantaged in lectures in English because of limitations in language proficiency and short-term memory (Dunkel, 1988; Dunkel, Mishra & Berliner, 1989), the utility of note-taking for lecture comprehension has been shown to be marginal or questionable. For instance, Dunkel, Mishra and Berliner (1989) found that note-taking does not affect immediate recall of content, and Chaudron and his co-researchers (Chaudron, Cook & Loschky, 1988; Chaudron, Loschky & Cook, 1994) have argued that quality of notes is not an indicator of comprehension. The taking of notes may interfere with learning as it distracts attention from the content of the lecture (Dunkel & Davy, 1989) and taking notes may impede comprehension if the information content of the lecture is high (Todd, 1996). Kirby, Woodhouse and Hadwin (1999) found that learning was maximised when students listened to a lecture without taking notes and then reviewed a set of notes

provided to them by the lecturer. Kiewra (1985) takes the position that learning is maximised if students review the lecturer's notes rather than attend lectures, make their own notes and review them, and Todd (1996) argues that the encoding hypothesis is incorrect and that we should therefore stop teaching students the 'time-honoured institution' of note-taking.

McKnight (1998) showed that the informants saw their task in the economics lectures, not as note-taking in the way it is usually thought of by LAS advisers, but as the verbatim transcription of the lecturer's overhead visuals, and it was noticeable that frantic transcription continued even when the lecturer stated that it was unnecessary to copy the overhead as the material was in the set text. As the transcripts of the lecturer's visuals became the basis of their revision strategy, the informants had confidence in the transcriptions of the lecturer's overheads and one referred to them as 'strong notes'. The lectures were not central to learning in Benson's (1994) sense, but the lectures provided the means by which the informants could obtain full transcriptions of the lecturer's overheads, which were highly valued by the students. However, the informants did not actually listen to the lectures as they could not listen and take notes at the same time. As one informant stated:

You know our brain can't do two ways. We have to copy and we have to listen. I think I can't do that. I don't know if the others can. (McKnight, 1998: 243)

Since ten out of the twelve informants in McKnight's (1998) study passed the subject without listening to the lectures and taking notes as this activity is usually understood, it is likely that they would have achieved similar results if they had accessed the lecturer's visuals in another way and had not attended the lectures. Sutherland, Badger and White (2002) also found that the international students they surveyed took notes from the lecture in order to gain an accurate record of the lecture to assist them with later essays and examinations, which leaves open the question whether an accurate record might have been more easily achieved in other ways.

Ling (1993) argues that listening and note-taking are antiquated means of gaining information, and since there have been major changes in the technology of teaching and learning and the university cohort in the past decade it is likely that this

statement is more true now than when it was originally made. While Badger et al (2001) argue that note-taking is central to academic literacy, the evidence against this claim appears to be mounting. Although lectures continue to be widely used as a method of teaching, their effectiveness for learning is increasingly doubtful and it may well be the case that lectures may not be 'optimal learning environments' for today's students (Oblinger & Oblinger, 2005b: 2.16). It may be that lecturers and LAS advisers cling to this vestige of traditional approaches to learning at university because we feel comfortable with it. However, resistance to change may be to the detriment of our functioning in this new era (Clayton-Pederson & O'Neill, 2005: 9.3). Some aspects of this new era will be considered in the next section.

## **Studying at university in 2005**

LAS advisers and parents of Net Generation students are well aware that studying at university is not the same enterprise as it was for baby boomers. Whereas previous generations of university students attended lectures and tutorials, today's students (who are likely to have work and family commitments in addition to their study) are much more selective about lecture and tutorial attendance. One reason for this is that they can access lectures on-line, and subject chat rooms may take the place of tutorials. While note-taking was important for baby boomers because once the lecture had been delivered it had gone forever, the on-line lecture can be accessed many times enabling personal notes to be taken. However, for many subjects note-taking is not necessary as many lecturers provide PowerPoint slides on the web. While baby boomers went to the library to research, the Net Generation uses the internet. Whereas baby boomers bought set texts from the university book shop or borrowed them from the library, today's students access selected readings and study guides on the web. Baby boomers sat at their desks to work with few distractions, and wrote essays on the basis of their reading of books and journals using a manual typewriter. The Net Generation student sits at the computer listening to her iPod with several different screens open enabling instant access to the assignment in progress, the library, the subject chat room and e-mail. Working in this way the Net Generation student produces reports, literature reviews, annotated bibliographies, posters and essays on the basis of their reading of e-books and e-journals as well as print books and journals. She uses hardware such as the personal computer, digital camera, and

scanner, together with software such as word processor and Endnote to prepare her work. Baby boomers' essays were submitted on paper with carbon paper being used to make a copy, and the final version was hand-delivered to the lecturer's pigeon-hole. Net generation assignments are submitted electronically and copied on a memory stick. Baby boomers prepared for examinations by re-reading lecture notes and studying past exams. Net Generation students prepare for examinations by making CDs which include downloaded questions from past examination papers, extracts from lectures, PowerPoint slides and reading notes.

The impact of new technologies on student learning can be seen in university buildings around the country. For instance, at Monash University 80 lecture theatres are now equipped with facilities which enable digitised audio recording of lectures which are made available to students on the web. 350 hours of recordings are made each week during semester covering 200 undergraduate subjects across all faculties. The popularity of this service can be gauged from the fact that 500,000 live audio streams were delivered to users in 2004 (Monash Memo, 2005).

If such rapid changes have occurred in learning at university, the question to be faced by LAS advisers is whether the skills we bring to our work are appropriate to the needs of the new generation of university students who approach study and writing in such different ways.

### **A generation gap?**

While it has always been the case that there is a generation gap between students and their teachers, and that lecturer and student perspectives have always been different (Oblinger & Oblinger, 2005b:2.10), at no previous time has that gap been as wide as it is now. According to Casey (2004:20) the world into which the Net Generation was born was so different to the world their parents entered that they could be on different planets. For example, even compared with ten years ago, the average first year student in Australia is more likely to be online for study and recreation for at least 8 hours per week, to expect a range of learning materials to be available online and to work with other students in group settings (Krause, Hartley, James & McInnis, 2005).



According to Prensky (2001a) the Net Generation are the first generation to have spent their entire lives using computers, video games, mobile phones, and other technologies. For him they are 'digital natives', who have 'hypertext' minds and highly-developed visual-spatial skills, are intuitive visual communicators, who prefer to learn through discovery rather than reading or being told, who shift attention rapidly, produce and expect fast response times, and are adept at multitasking and interacting with others to complete tasks. Contrast these attributes with those of the baby boomers, or as Prensky (2001a) labels them 'digital immigrants', who have a preference for learning through being told and reading text, through interaction and practice, step-by-step, one thing at a time, working individually. While it is important to be cautious about sweeping statements about generations, and Dede (2005:11) points out that students in any age cohort will present a mixture of preferred learning styles, Prensky (2001a:2) suggests that

Digital Immigrant instructors, who speak an outdated language (that of the pre-digital age), are struggling to teach a population that speaks an entirely new language.

Prensky (2001a:2) also points out that even if digital immigrants learn to adapt to the new environment they retain their 'accent', that is, their preferred ways of doing things. For example, they may turn to the Internet for information as a second option rather than the first, print out their emails, and edit from hard copy rather than the screen.

The impact of the new technologies may be much broader than we digital immigrants suspect. According to Prensky (2001b) the Net Generation has been socialised in a way very different from their parents with the result that their brains may be physically different. This means that 'today's students think and process information fundamentally differently from their predecessors' (Prensky, 2001b: 1). If Manuel (2002) is correct that reading from the Net involves scanning rather than reading, approaches to study skills learning and teaching may need fundamental reconsideration.

While changing technologies mean that traditional learning and teaching methods are no longer appropriate, there is little evidence that lecturers are prepared to face the new challenges. Despite the impact of information technology on the Net generation, university teaching has changed little (Wager, 2005: 10.1), and university teachers are reluctant to adopt Internet technology and use it in the classroom (Jones, 2002:9). Such findings are supported by a small-scale study of British lecturers (Sutherland & Badger, 2004) which found that lecturers' perceptions varied between 'total resistance' to the modern technology available to 'total adoption' of the available technology including the world wide web, PowerPoint and videos. Whatever their views about technology in the classroom, most lecturers surveyed saw the lecture as the one-way transmission of information, indicating no change in the basic function of the lecture since medieval times (Sutherland & Badger, 2004: 289). While it may be clear to Net Generation students that 'Faculty must toss aside the dying notion that a lecture and subsequent reading assignment are enough to teach the lesson' (Windham, 2005: 5.9), it may not be so easy for lecturers to make that change. Even if they do make the change, new technology is no guarantee of good teaching if it means only that 'death by PowerPoint' replaces 'death by lecture' (Clayton-Pederson & O'Neill, 2005:9.1).

### **Are we perpetuating ineffective teaching and learning?**

Concerns have long been expressed about the gap between preparatory programs such as those offered in EAP programs and the main study context (Jones, 1999), and Lea and Street (1998) have expressed the concern that students are being marginalised rather than being drawn into the university academic culture. The recent developments in the technology available to students in the 21<sup>st</sup> century appear to create similar gaps between the support we offer as LAS advisers and the ways in which students actually learn in academic writing and in other study areas. For instance, while baby boomer LAS advisers may prefer to access information through print, the Net Generation accesses information digitally (Oblinger & Oblinger, 2005b: 2.2). The result is that although reading text may be the preferred mode of learning for academics and librarians, it is not the preferred mode for most of the present university population (Oblinger & Oblinger, 2005b: 2.15). If a particular mode of learning is relatively unfamiliar to us, how can we improve our students' command of

that mode of learning? If as Prensky (2001a: 1) comments 'Today's students are no longer the people our educational system was designed to teach', and traditional teaching methods are less effective with Net Generation students (Moore, Moore & Fowler, 2005: 11.6), LAS advisers are placed in an increasingly difficult position.

### **Will technology leave us behind?**

Technology in learning and teaching is here to stay and developments will continue at a faster and faster pace. The new generation of students possesses skills and learning styles which are unfamiliar to many lecturers but which have profound implications for teaching and learning. Although lecturers and LAS advisers may feel insecure in the face of the new technology and the jargon which accompanies it, it is clear that learning styles are undergoing a process of rapid change, and teaching styles will need to change to keep pace. In the process of change some of our cherished traditions may have to change or disappear. Barone (2005:14.3) considers that some of the 'sacred cows' of higher education such as the academic lecture may not transfer successfully to the new context of learning and teaching, and learning will be based increasingly on 'mediated immersion and distributed learning communities' (Oblinger & Oblinger, 2005a: 2). At the very least it is likely that some of our current practices such as note-taking and study skills training may no longer be appropriate.

In order to close the generation gap between students, lecturers and learning advisers, changes at all levels are necessary. According to Moore, Moore and Fowler (2005), university staff must develop awareness of the changing nature of study at university, the changing learning styles of the new generation of students and the developing technology to assist learning and teaching. Large scale professional development is necessary to enable staff to develop skills in the new technology and to implement curriculum changes to make the curriculum offerings more attractive and accessible to the student cohort, and integrated changes are necessary at the levels of teaching and support services, architecture, technology, and policy to enable successful learning. Dede (2005:1) states that university staff must themselves experience 'mediated immersion' and develop 'neomillennial learning

styles' if they are to teach the changing cohort of students effectively as the nature of students alters, and this will present challenges for all involved in higher education.

## Conclusion

Haggis (2003) states that we are still in a situation where we know little about how students learn, or fail to learn, through their interaction with texts and writing, but in this paper it has been argued that we are even further from understanding how students learn or fail to learn through their interactions with digital literacies. We cannot assume that the current students are the same as we were when we were students, or that we know how students learn best in the 21<sup>st</sup> century, and we need to take steps to find out. Oblinger and Oblinger (2005b: 1) point out that although we routinely collect demographic information on our learners, 'we may not be asking the questions that will help us design and deliver programs that are optimal for current learners'. In this respect LAS advisers are in a privileged position as our work enables us to have regular contact with students and to develop good working relationships with them. LAS advisers could learn from the suggestion of Chanock and Vardi (2005:4) that we should use our experience of reading the documents that construct students' learning, and talking with students about what and how they learn in order to develop our understanding of the new generation of students. If we do not take steps to question some of our common sense assumptions about our work, we may be hindering rather than helping our students.

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