Preparing International Students for Study at University: Do we Know what we are Doing?

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In this paper it will be argued that much research into how international students learn from lectures is inadequate as a guide to practice for teachers of English for Academic Purposes (EAP). On the basis of some findings of a qualitative study of international students learning from authentic lectures (McKnight, 1998) and other research into academic listening and note taking, it is proposed that much of our work in EAP may be mis-directed, and a focus on note taking skills in learning from academic lectures may actually be unhelpful for international students. Rather than being taught to adopt a skills-based approach to their studies, international students should be encouraged to adopt a tactical approach to learning at university. Some tentative suggestions about how such an approach might be implemented in relation to learning from academic lectures in English are presented.

Keywords: Listening, note taking, academic lectures, international students, English for Academic Purposes, tactical learning.

Introduction
The primary focus of our work as learning skills advisors is the improvement of the study skills of students. Therefore, it is not surprising that much of our work as teachers of English for Academic Purposes (EAP) is essentially pragmatic and focussed on the needs of our students. Within this context, our work appears to be based on tradition and intuition rather than research. For example, as university graduates ourselves, we believe that lecturers lecture and students listen and take notes. After all, this is the type of teaching and learning experience to which we were exposed. As EAP practitioners we believe that students learn by listening, and in order to capture the one-off lecture, students take notes. Our international students tell us that listening and taking notes in academic lectures are difficult tasks for them. After all, this is the type of teaching and learning experience to which we were exposed. As EAP practitioners we believe that students learn by listening, and in order to capture the one-off lecture, students take notes. Our international students tell us that listening and taking notes in academic lectures are difficult tasks for them. On the basis of this experience, our intuition tells us that sessions on listening and note taking are helpful to our students, and attendance at our classes confirms that we are correct. However, basing our work on tradition may blind us to the major changes in tertiary education in the past two or more decades, and our intuition may not always be a good guide to our practice. Perhaps therefore, we should rely more on research than tradition and intuition in our work.

In the present context where Australia has the highest per capita number of international students in the world (Rood, 2004) and international students make a major contribution to the economy of the state of Victoria (A$1.5 billion in 2003, according to Broadbent, 2004), all Australian universities are becoming increasingly dependent on the fees income derived from international students (Miller, 2004). Although listening to lectures is said to be a key symbolic act in the culture of learning (Benson, 1994), and taking notes is said to be central to
academic literacy (Badger, White, Sutherland & Haggis, 2001), there is surprisingly little
research on how international students learn from academic lectures, and EAP teachers who
turn to the research to assist them in their work find that it is often unhelpful and sometimes
contry to current practice in the field. What can we do as EAP practitioners to assist
international students in the difficult task of learning complex content through the medium of
their second, or third, or fourth language?

In this paper it is some of the research on learning from academic lectures is considered with
a particular focus on listening and note taking. In addition I outline some of the problems with
the existing research, present some findings from research based on learning from authentic
lectures, consider the implications for EAP, and make some tentative suggestions about future
directions for EAP and the work of EAP teachers.

EAP listening research – psychological approaches
Lectures have long been criticised as a means of presenting information (McLeish, 1976) and
it has been shown that some students learn the material required to pass subjects without
attending lectures (Hyde & Floumi, 1986). There is a good deal of research which indicates
that lectures and seminars are difficult for international students (Bilbow, 1989; Felix &
Lawson, 1994; Littlemore, 2001; McKenna, 1989; Mason, 1994; Nixon, 1993; Thompson,
1994; Zeng, 1996), and although other approaches to the study of EAP listening and learning
are becoming more prominent (see for example Hodgson, 1984; Biggs, 1993; and Marton,
Dall’Alba & Beatty, 1993), the dominant approach to research in the field has been informed
by the discipline of psychology. The psychological paradigm has been a major influence on
applied linguistics and EAP, and within the psychological paradigm information-processing
theories have been dominant (Clark & Clark, 1977). Information-processing theories assume
that, in order to understand listening (or reading) comprehension, we must understand the
cognitive processes the individual undertakes in order to take in the input, process it, store it
and retrieve it for later use. Researchers in this paradigm have considered that reading and
listening are essentially similar processes (Lund, 1991), and that the listening comprehension
processes used by native speakers and non-native speakers of English are essentially similar
(Wolff, 1987). From the information-processing point of view, note taking is thought to be
important for learning since it serves two functions: an ‘encoding’ function, since the process
of interpreting the input and creating notes helps students attend to and remember the
information presented; and a ‘storage’ function, as the notes provide a written record for
review or revision at a later date. From the standpoint of the information-processing
paradigm it is easy to see why note taking has been thought to be so important.

Listening research is difficult because listening is an invisible mental process. Researchers
within the information-processing paradigm have attempted to solve the problem of making
invisible mental processes such as listening and learning amenable to study by modelling the
listening process using scripted materials, making inferences from experimental simulations
of the listening process, and analysing the output of listening in the form of listeners’ reports,
summaries, notes or test scores to draw conclusions about the mental processes used and the
degree of comprehension achieved (Kintsch & Bates, 1977).

So many different factors have been shown to affect the comprehension of lectures that the
literature is quite bewildering. However, researchers have commonly studied factors including
note taking, speech rates, listening strategies, discoursal features, background knowledge and
vocabulary. For the purposes of this paper I propose to consider some research on note taking
as it is the focus of so much of our work in EAP.
Research on note taking
Interest in note taking by non-native speakers of English (NNSs) increased following the publication of research by Dunkel (1985), who found that notes improved learning because they enabled review and revision: in other words, the storage function of notes assisted learning. Later research by Dunkel and her co-researchers (Dunkel, 1988; Dunkel, Mishra & Berliner, 1989) indicated that non-native speakers are particularly disadvantaged in lectures in English because of limitations in language proficiency and short-term memory. However, while such research is in accordance with our professional intuition, it does not provide assistance to us in our work.

Indeed, much of the research does not focus on the practical concerns of EAP teachers, and some of the research may even undermine much of our current practice. For example, Dunkel et al. (1989) found that note taking does not influence immediate recall, and Chaudron and his colleagues found that quality of notes is not an indicator of comprehension (Chaudron, Cook & Loschky, 1988; Chaudron, Loschky and &., 1994). If these researchers are correct, it is not clear why EAP teachers place such emphasis on note taking. Furthermore, according to Dunkel and Davy (1989), taking notes distracts attention from the lecture, and Todd (1996) considers that making notes may harm comprehension when the information content of the lecture is high. If we accept these findings, perhaps we should be advising international students not to take notes at all. This feeling may be strengthened by the work of Kirby, Woodhouse and Hadwin (1999), who found that learning by students was maximised when students listened to a lecture without taking notes and then reviewed a set of notes provided to them.

Kiewra’s (1985) position is that learning is maximised if students review the lecturer’s notes rather than attend lectures, make notes and review them. If Kiewra (1985) is correct, part of our role as EAP teachers might be to advise our international students not to attend lectures, but to simply ask lecturers to provide them with notes.

Some problems with psychologically-oriented research
Before taking such a drastic step we need to consider some of the potential problems with psychologically based research into the learning of international students from academic lectures. One major problem is that little of the well known research has been based on students in authentic academic lectures, leading to doubts about whether the findings are relevant to our concerns. For example, some of the input texts are as short as three minutes (Dunkel, 1988), compared with the standard lecture ‘hour’ in Australia of fifty minutes. Other studies are based on input material that is read aloud (Chaudron et al., 1986), or delivered on tape in a language laboratory rather than ‘live’ in a lecture theatre (Blau, 1990). Such studies do not take into account the raked seating, dimmed lighting and background noise which are typical of the authentic lecture. Because of the perceived need to exclude factors other than the one under study, studies within the information-processing paradigm exclude other potential sources of information normally open to university students. For example, there is no opportunity to read a textbook on the topic or attend a tutorial to discuss it and share knowledge and information. In some studies factors such as background knowledge have not been allowed for (Dunkel et al., 1989).

A feature of many of the psychologically based studies is that individual factors such as speech rate or students’ notes or discoursal features of the input are isolated for study and considered in isolation. This means that the possible interactions between a number of
different factors (for example, vocabulary, speech rate and listening strategies) cannot be taken into account. A further problem is that the listening task is de-contextualised since the research is conducted on tasks which are not relevant to the informants’ study. For example, a listening task on the history of the pyramids (Dunkel et al., 1989) is of no relevance to students studying first year economics.

Some of the research is based on material which is tightly scripted and heavily manipulated. For example, in the well-known study on the effect of discourse markers on comprehension (Chaudron & Richards, 1986), four different versions of a short listening text were produced. Input material of this type is quite unlike the semi-planned discourse of authentic lectures and the findings must therefore be open to question.

**Research on authentic lectures**

As indicated above, psychologically based research into the learning of international students from lectures has been limited in scope, leading to doubts about the utility of much of the existing research for teachers of EAP. Almost thirty years ago Hartley and Davies (1978) were calling for research on the behaviour of students in authentic lectures rather than in controlled experimental contexts, and it is the contention of this paper that qualitative research on international students learning from authentic lectures is more likely to be of assistance to EAP teachers than experimental research.

In recent times there has been some research which has moved beyond the quantitative study of inauthentic input. For example, based on his participant observation of an individual student attending a course of lectures, Benson (1994, p. 196) states that “Listening to lectures constitutes a central and symbolic act in the culture of learning.”

Elsewhere Benson (1987) noted the ritualised nature of the lecture, and observed that note taking was particularly important to the students.

In Australia, Clerehan (1992) studied note taking in an authentic commercial law lecture and found that international students from second language backgrounds omitted many more key points than first language speakers. She concluded that the notes taken by L2 students were not useful for either encoding or storage purposes.

In their study of students in Hong Kong, Flowerdew and Miller (1992) found that for their informants, ‘note taking’ in lectures consisted of using highlighter pens to underline relevant sections of the textbook. This suggests that issues such as lecturing style, textbooks and cultural factors should be taken into account in our work to prepare students for study in Western universities.

King (1994) undertook a naturalistic study of fourteen postgraduate lectures in highway engineering and was interested in the relationship between the verbal and visual components of the lectures and the extent to which the notes of NNSs reflected these two components. It is surprising that few studies have considered the visual component of academic lectures, although many lecturers appear to place great emphasis on overheads and PowerPoint slides. If we wish to assist our students to learn more effectively, it appears that we must take into account all aspects of the lecturer’s style of presentation and not focus solely on the oral presentation.
In another Australian study, Mulligan and Kirkpatrick (2000) studied students in lectures on Architecture and Construction Management and Economics and Finance. Based on student questionnaires, interviews with lecturers and students and group interviews with students, these researchers found that although approximately 34% of students from English-speaking backgrounds thought that they had understood the content of the lectures very well, only 9% of students of non-English-speaking backgrounds had a similar view.

Studies such as this indicate the extent to which some students may be disadvantaged in relation to others in lectures, but do not explore in depth the reasons for the difficulties faced by a high proportion of the student cohort. In the next section of the paper I shall consider my own study (McKnight, 1998), a naturalistic case-study of twelve international students undertaking Economics I as a compulsory core unit in the first semester of a Bachelor of Business degree at a large university in Melbourne.

**Learning by listening and note taking?**

The major aims of the study were to discover what the informants were able to recall of the key points of Economics I lectures, how the informants perceived the lectures contributed to their recall and learning, and what features of lecture presentation assisted or hindered their learning. All informants were female and all had achieved the IELTS entry score required at the time of the study (5.5 or approved equivalent). Of the twelve informants, eleven were ethnic Chinese from Hong Kong, Malaysia and Indonesia and one was from a small Pacific Island nation.

The data for the study consisted of both qualitative and quantitative data including ‘gain scores’ (the differences in scores on pre- and post-lecture tests), examination results, post-lecture questionnaires and summaries, taped and transcribed post-lecture interviews, discussions with the lecturer, copies of the lecturer’s overhead visuals and lecture notes, copies of informants’ notes, observation notes, audio and video recordings and transcriptions of lectures, and audio-taped and transcribed ‘cued reports’ (student responses to replayed sections of the original lecture). The data set was very large and complex, but some findings are of particular relevance to the EAP context.

**Some findings**

In the following section the three key questions of the study will be presented and the findings summarised.

**What did informants recall of the key points presented in the authentic academic lectures?**

The short answer to this question is that the recall of key information presented in the lectures as measured by the gain scores was very limited. Results of the pre-lecture tests indicated that most of the informants knew little about the content before the lecture, despite the fact that the lectures were very well organised and the study guide clearly set out the required and recommended reading for each week. More surprising was the fact that results of the post-lecture tests showed that most informants knew no more about the key content after each lecture than they knew before it, and often they knew less after each lecture than before it, indicating that the input from the lecturer had impeded what little they already knew. This raises the question of the utility of lectures, but space limitations preclude such a discussion here.
The post-lecture summary task proved to be extremely difficult for the informants and there was wide variation in scores from week to week and informant to informant, and the results the informants achieved in the end of semester examination were similarly inconsistent. Whilst the overall results showed that ten informants passed the examination and two failed, informants who appeared to have recalled least from the lectures, as measured by the gain scores, nevertheless succeeded in the unit overall. For example, the informant who gained a Distinction for the unit overall performed poorly as measured by the weekly gain scores.

The overall poor performance in the recall and summary tasks did not appear to be attributable to listening comprehension problems alone, as the cued reports indicated that the informants could recall material with a reasonable degree of success when it was presented in a manner which did not overt-tax their processing capabilities and when the informants were able to focus on the verbal input.

Since the lectures were a major component of the learning opportunities presented to the informants and a central organising feature of Economics I, and since ten out of the twelve informants passed the unit, these findings suggest that learning from the lectures was achieved, but not as a result of listening and note taking processes of the type assumed by most listening comprehension and note taking researchers and EAP materials.

What were the informants’ perceptions of the contribution of the lectures to their recall and learning?

The informants’ perceptions were gained by analysing the post-lecture questionnaires and interviews, and although there was great individual variation, there was substantial agreement on two matters. Firstly, the lecturer presented too much information too quickly and secondly, the visual component of the lectures was central.

The issue of the lecturer’s speech rates will be discussed in the following section following discussion of the visual element of the lectures.

The lecturer presented approximately twenty-five visuals in the course of each lecture of 90-100 minutes, and the informants saw it as important that they transcribed the visuals into their notebooks. From the results of the weekly tests outlined in the previous section it appears that these notes could not be absorbed quickly enough to enable the informants to perform well on the post-lecture tests. However, the students’ notes became the central resource for the informants’ preparation for the examination at the end of the semester, together with tutorial notes, the reading of various texts, the study of previous exam papers and in some cases consultation with senior students and tutors. In relation to the text book, the informants were aware of the lecturer’s expectation that they would complete the set reading before each lecture in order to assist their learning from the lecture, but few actually read the text either before or after the lecture, and most did not purchase the set text, perceiving it as too large, too daunting, and too expensive.

What features of lecture presentation assist or hinder learning by the informants?

Much research into listening comprehension has focussed on speech rates, and as indicated above the informants frequently complained in interviews that the lecturer spoke too fast. However, measures of speech rate indicated that the lecturer’s rate of delivery was at the upper end of the normal range, and the cued reports elicited few similar complaints. This
suggests that the informants’ difficulties in comprehending and recalling the input did not derive from speech rates per se, but more likely from a combination of normal to moderately fast rates of delivery and the dual inputs, verbal and visual, which forced the informants to choose between listening and transcribing the overhead visuals.

In interviews the informants made it clear that they saw their task in the lectures as the verbatim transcription of the lecturer’s overhead visuals, and it was observed that the exercise of transcription continued unabated even when the lecturer stated that it was not necessary to copy the overhead as the material was in the textbook. Many audience members, including the informants, took the opportunity presented by the brief break after approximately 45 minutes to complete their ‘notes’. A close comparison of the informants’ notes and the lecturers’ overheads indicated that, allowing for differences in handwriting, the informants’ notes were identical with the lecturer’s visuals. It was particularly striking that no examination hints had been noted by the informants, even when the hints were rather broad and would have been extremely helpful in preparation for the examination. This was presumably because the hints were made only verbally, and no hints appeared on the overhead visuals.

In interviews the informants indicated that the particular style of presentation presented them with a stark choice: they could either listen and attempt to make their own notes, or they could transcribe the overheads. They could not do both. 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)

The decision in favour of transcribing the visuals was a simple one as the lecturer’s visuals provided what the informants saw as ‘strong’ notes, and they lacked confidence in their own listening and note-making skills. In other words, while the informants had little confidence in their encoding ability, they greatly valued the storage function their transcriptions of the lecturer’s visuals provided.

**Conclusions of the study**

The conclusions of my study can be summarised briefly as follows: My informants did not listen to the Economics I lectures as they could not listen and take notes at the same time. Given the choice between listening and transcribing the lecturer’s overheads the informants opted for transcription. To express the point in a different way, my informants did not ‘make notes’ in the sense of processing the verbal input and encoding it by creating their own written records of it. Rather, my informants ‘took notes’. In other words, they transcribed the overheads verbatim without processing the input at the time.

To the extent that ten of the twelve informants passed Economics I, it is argued that the informants succeeded in their study on the basis of their reading comprehension, rather than their listening and note-making skills.

**Implications of the study for EAP**

This study has a number of implications for our work in EAP. In the first place, there appears to be a need to distinguish between taking notes (transcribing the lecturer’s overheads without processing them) and making notes (listening to the lecture and creating one’s own notes from the input). In the case of this study, the informants could have chosen to listen and make notes, but they did not, because, given the constraints under which they were working, they could not listen and create their own notes. Instead they concentrated simply on taking notes,
that is, transcribing the lecturer’s overheads. The indications of learning chosen for this study show that this process did not lead to recall of the lectures soon after the lecture had finished, but the complete sets of transcriptions of the overheads did help most of the informants to learn the necessary material and pass the examination. This leads to the obvious question: what was the point of the lectures for the informants? It could be argued that a more effective approach to learning and teaching would have been for the lecturer to simply abandon the lecture and provide copies of the overheads, but this is another topic for some other occasion.

The study also indicates that academic lectures are vastly more complex linguistic and behavioural events than previous research and EAP practice have suggested, and lecturers do much more than simply make oral presentations. If it is the case that students may not learn simply by listening and making notes, much EAP work may be mis-directed and a focus on listening comprehension and note-making as modes of learning from lectures may be unhelpful.

As EAP practitioners we need to go back to first principles and begin asking ourselves some basic questions such as the following:

- Do students learn from lectures?
- If so, how is the learning achieved?
- Is note-making any more than a “time-honoured institution” (Todd, 1996, p. 218) of questionable value in the 21st century?

On the basis of our answers to these questions we may need to reconceptualise the whole matter of learning at university and consider the possibility that academic lectures may no longer be central to learning. We may need to consider the possibility that in lectures students may not listen and make notes as we have traditionally assumed and that offering students classes in taking notes may not help them learn. We also need to ask ourselves whether we are keeping up with the technology which may be having direct effects on the ways by which students learn.

**The lecture theatre in the digital age**

Since my study was conducted there have been major changes in the teaching and learning processes at universities, and there are signs that a very old technology - the academic lecture - is changing rapidly with resulting changes in how students learn. Whereas the lecturer in my study used an overhead projector, in my current institution PowerPoint is now widely used and students can download the PowerPoint slides from the unit website, thus making note taking superfluous. Furthermore, many lectures are audio-recorded and made available on the web by audio streaming, meaning that students no longer need to attend lectures. For many subjects the lecturer’s notes can be downloaded from the unit home page, together with the study guides, past examinations and sometimes summaries of key readings. Some students tell me that in order to prepare for the revision of particular subjects they burn their own study CDs which include lectures and all other information available to them from the web. In some units, subject chat rooms are available on the web, possibly obviating the need to attend tutorials. Given that many students need to work to fund their studies and international students are permitted to have employment for 20 hours per week, learning at university is changing dramatically. Given all these changes that are underway, where is EAP heading?

**Some possible future directions for EAP**

As indicated in the previous section, EAP practitioners need to know much more about how students actually learn at university (which may well not be the way we learned), and how the
learning process is being changed by the technology now freely available. EAP materials need to be based on authentic tasks and behaviour, and EAP listening tasks need to be consistent with how students actually learn and the tasks required in authentic lectures. EAP materials and teaching approaches need to show the inter-relationship between aural input, visual materials and reading and take account of how lectures and other learning materials and opportunities may be accessed and used for learning purposes.

Beyond these initial suggestions it appears clear that in the context of rapidly evolving technology and learning opportunities the current EAP focus on skills such as listening and note taking needs to be re-considered. Perhaps we need to place emphasis on study tactics rather than study skills and encourage our students to adopt a tactical approach to their learning. For example, EAP lecturers could encourage students to research their own learning context by adopting an ethnographic approach to their own learning environment. One step towards this might be to encourage students to research their own learning context by asking themselves questions of the following kind about the lectures:

- What style does the lecturer use?
- Formal/informal? Interactive/non-interactive?
- Does the lecturer record the lectures?
- How are the recordings made available?
- Does the lecturer use visuals?
- How important are the visuals to the lecture content?
- Are the visuals available?
- Does the lecturer make lecture notes available?
- Is it worth taking lecture notes? Why/Why not?
- Does the lecturer make reading notes available?
- How can you access the reading notes?
- Is it worth attending the lectures? Why/ Why not?

Similar questions could be asked of the tutorials or practicals and the reading materials, and on the basis of such ‘fieldwork’, in consultation with EAP teachers, students could be encouraged to consider how they could use all the available resources to help them learn the subject.

Conclusion

In many ways it is surprising that in the 21st century universities continue to use an "indestructible" (Jacques 1997, p. 41) teaching technology invented 2500 years ago (McLeish, 1976, p. 252), and increasingly university teachers are being called upon to rethink teaching in the context of diversity (Northedge, 2003). It is an argument of this paper that we are on the cusp of major changes to how learning and teaching are conceived and therefore to our work in EAP. In the past, EAP practice has been based on tradition and intuition rather than research, and relatively little research has been a useful guide to EAP practice. The focus of EAP practitioners has traditionally been essentially pragmatic and student-centred, and we need to retain these features of our profession. However, there is a strong case for suggesting that EAP needs to become more critical of existing materials and practice, and in an era of rapidly changing technology we need to encourage our students to become more tactical in their approaches to improving their learning at university.
References


