Journal of University Teaching & Learning Practice

Volume 3 | Issue 2 Article 3

7-1-2006

Does Attendance Matter? An Examination of Student Attitudes, Participation, Performance and Attendance

P. Massingham
University of Wollongong, peterm@uow.edu.au

T. Herrington
University of Wollongong, tonyh@uow.edu.au

Follow this and additional works at: http://ro.uow.edu.au/jutlp

Recommended Citation
Massingham, P. and Herrington, T., Does Attendance Matter? An Examination of Student Attitudes, Participation, Performance and Attendance, *Journal of University Teaching & Learning Practice*, 3(2), 2006.
Available at:http://ro.uow.edu.au/jutlp/vol3/iss2/3

Research Online is the open access institutional repository for the University of Wollongong. For further information contact the UOW Library: research-pubs@uow.edu.au

Does Attendance Matter? An Examination of Student Attitudes, Participation, Performance and Attendance

Abstract
Non attendance of lectures and tutorials appears to be a growing trend. The literature suggests many possible reasons including students' changing lifestyle, attitudes, teaching and technology. This paper looks at the reasons for non attendance of students in the Faculty of Commerce at the University of Wollongong and identifies relationships between attendance, participation and performance. The results indicate that there are valid reasons for non attendance that are both in the control of learners and teachers. There are also clear benefits for students to be gained in attendance; however, changes in the way we learn, teach, assess and use technology are recommended if we wish to reverse the trend.

This journal article is available in Journal of University Teaching & Learning Practice: http://ro.uow.edu.au/jutlp/vol3/iss2/3

Journal of University Teaching and Learning Practice

Does Attendance Matter?

An Examination of Student Attitudes, Participation, Performance and Attendance

Peter Massingham

University of Wollongong

peterm@uow.edu.au

Tony Herrington

University of Wollongong

tonyh@uow.edu.au

Abstract

Non attendance of lectures and tutorials appears to be a growing trend. The literature suggests many possible reasons including students' changing lifestyle, attitudes, teaching and technology. This paper looks at the reasons for non attendance of students in the Faculty of Commerce at the University of Wollongong and identifies relationships between attendance, participation and performance. The results indicate that there are valid reasons for non attendance that are both in the control of learners and teachers. There are also clear benefits for students to be gained in attendance; however, changes in the way we learn, teach, assess and use technology are recommended if we wish to reverse the trend.

Acknowledgement: The authors wish to thank Kieren Diment for his assistance in the article's statistical analysis.

Pre-amble

Dr Peter Massingham

I taught a large undergraduate class in International Business last year and was standing at the front of the Sports Hall during the final exam, waiting for questions from students during their 15 minute reading time. A student looked at me from the middle of the group and cautiously raised his hand. Eager to help, I bounded over to him and he asked 'Are you my lecturer?' I had hoped that after thirteen weeks of lectures, students would know who I was, unless, of course, they never went to lectures. Earlier last year, I was handing out marked final assignments at the Sydney Business School and a student I had not seen once during the session stood before me to collect his. I looked closely at him and said 'I don't think I've seen you before, don't you come to lectures?' He said no. I asked 'How do you expect to pass the exam?' He laughed and walked out of the lecture room.

I have always wondered why some students cannot be bothered to attend classes. Maybe they are too busy. A colleague told me that 'it is expensive being a young adult nowadays and many students work'. Perhaps this partly explains why some students sleep during lectures. I once stopped a lecture at the Sydney Business School and went outside to find a cushion for a student who was slumped all over the table snoring loudly. Unfortunately, I woke him as I was trying to place the cushion under his head. He apologised profusely and explained that he had been up all night working at a Service Station. That seems to be part of the answer – students work at night and come to university to sleep.

I guess we all have war stories like this and there will always be students who do not come to lectures or do not actively participate in the learning process, for example, by sleeping. Two recent events led me to question whether we should simply accept this as fact or try to do something about it. First, one of my subjects was offered on the South-Coast Campuses of the University of Wollongong for the first time in 2005[1]. This meant that students at the main Wollongong campus could access the audio of the lectures through the Web, that is, through eduStream. Second, I was bothered by an apparent lack of interest and participation in the subject by this year's cohort of students. I wondered whether the two issues were related or whether there were other factors involved.

I sought the counsel of colleagues and discussed their views on student attendance. One colleague, a former Vice-Chancellor's Outstanding Contribution to Teaching and Learning (OCTAL) award winner, told me that 'he doesn't care about attendance'. Despite this, students flock to his lectures. The reasons may be summed up as personal charisma. He has a strong personality, is opinionated, and is an entertaining and intelligent presenter. You can imagine him as being the dominant person at a dinner party or a cocktail function, where everyone stands around, glass in hand, listening to him talk on any subject. Another colleague, also an OCTAL award winner, has outstanding interpersonal and presentation skills. He combines a gentle nature with special abilities to interact with students. The reasons for his success may be summarised as likeability. Students just love coming to his lectures, they adore him, and therefore, hang onto his every word. This feedback was not helpful. Lacking in either charisma or likeability, I had to find other ways to engage my students in the learning process[2]. I decided to survey my students about their attendance at lectures and to work with Associate Professor Tony Herrington from the Faculty of Education, to analyse the results.

[1] Autumn session 2005. South Coast campuses are satellite campuses, some distance from the main campus where lectures are held.
[2] Massingham won an OCTAL Award in 2004. His comments here are a little tongue-in-cheek but aim to introduce the potential importance of the relationship between lecturers and students, which is an important theme in the article.

The Nature of the Problem

Declining student attendance at university is not a new phenomenon. Rodgers (2001) cites an historical account of dwindling attendance at sermons at Oxford University in the 14th century. More recently, studies in the 1970s (Snyder, 1971) and 1980s (Beard & Senior, 1980) show us that attendance has been a problem for decades. A number of reasons have been suggested.

Learning

Student attitudes to learning are very different from thirty years ago. In the 1970s, researchers studying reasons for lecture attendance identified the excitement of intellectual discovery: the presentation of challenging and provocative ideas, arguments and counter-arguments (Bligh, 1972); and the desire for knowledge, stimulation of interest, clarity of explanation, enthusiasm and organization (Feldman, 1976). More recent research has also found support for the desire of knowledge (see Isaacs, 1992; Ramsden, 1992; Laurillard, 1993; Biggs, 1999; Browne and Race, 2002). It is clear that a small group of learners still go to University because they genuinely enjoy learning and feel lectures make knowledge meaningful (Dolnicar, 2004). Conversely, there is a group of students who have alternative motivations to learn.

Some researchers argue that 'education is seen as a means towards some end, rather than being valuable in its own right' (Coxon, Jenkins, Marshall & Massey, 1994). Coxon, *et al*, (1994) identified a category called the 'instrumental student' based on the concept of instrumentalism, or technocratic rationality, which is a form of rationality which 'separates means from ends, facts from values, methods from purposes, the how from the why' (p. 13). Similar to Marton & Säljö's (1976) concept of 'surface learners', and Dolnicar's (2004) category of 'pragmatics', these students do not attend university for the enjoyment of the learning process, rather they focus on the end goal, which is to find a good job. A recent study (Ditcher & Hunter, 2004) concluded that the phenomena of 'instrumental students' is not new but it is an increasing trend. In 1971, Snyder found that the primary objective of many engineering students at Massachusetts Institute of Technology in the 1960s was to learn enough to 'further their specific career or life plans' (p. 16). While a 1980 study found that a major complaint from lecturers was that 'students are not motivated... [and] lack an urge to work independently, applying themselves only if external pressures are exerted... students these days are not interested in the courses they have selected but simply want a qualification and a good job' (Beard & Senior, 1980, p.1). But are these complaints about unmotivated students a reflection of an outdated pedagogy? Are they defensiveness from lecturers unwilling to change the way they teach?

Teaching

The reality is that the majority of students will attend lectures only if they perceive 'value' in them. Value perceptions are based largely on the teaching process and the lecturer's competence. This thinking is not new. Researchers in the 1970s identified the importance of the lecturer in conveying principles rather than details (Sheffield, 1974) and in generating understanding in order for lectures to be effective (Bliss & Ogborn, 1977). Researchers have also identified the ability of lecturers to analyse and synthesise complex material, make it simpler for students, and explain it clearly, as a reason for lecture attendance (Bligh, 1972; Land, 1985; Isaacs, 1992). The ability to communicate with clarity (Solomon, Rosenberg & Bezdek, 1964; Feldman, 1989) and provide well organised and structured lectures (Brown & Atkins, 1988; Ramsden, 1992; McKeachie, 1994; Race, 2002; Exley & Dennick, 2004) have

emerged as important teaching competencies and explanations for high student attendance rates.
However, these competencies tend to pre-date the wide-spread use of web-based teaching resources. They also illustrate an out-dated pedagogy. A contemporary, constructivist approach requires students to analyse, synthesise, and explain. This approach argues that the teacher's role is to facilitate and guide this process, rather than do it for the students.

It may well be that the style of teaching that motivated students thirty years ago is found wanting in today's educational context. The teaching and the learning environment in schools has changed. More emphasis is now placed on approaches that involve problem solving, collaboration, discussion, authentic contexts, and action. There is now less emphasis on teacher-centred instruction, information, passive and individual learning. It may be that today's students have benefited from learning in a constructivist manner and are simply bored by the instructivist approach they face in many university lectures.

Assessment

A more recent phenomenon is attendance purely for access to information for assessment purposes. Students are particularly interested in information that will help them with assessment tasks or exam questions (McKeachie, 1994; Murphy, 1998; Browne & Race, 2002; Exley & Dennick, 2004), and only attend classes for these reasons. In a cross-Faculty study, Dolnicar (2004) identified this group as 'pragmatics'. She found that these students have a higher representation in Commerce Faculties, have the lowest attendance rates, and may now represent the reality of tertiary education in Australia. However, the type of assessments used may influence this trend. Assessments that only measure fact recall, rather than higher order thinking, encourage instrumentalist behaviour because students know they can easily gather this type of information from alternatives to lectures, such as the world wide web.

Technology

Technology has had a significant impact on the way we teach and the way students learn. Changes in technology are paralleling the changes in teaching and assessment. Flexible learning has received considerable attention in the educational literature. Twenty years ago, flexible learning meant using multiple whiteboard marker colours or occasionally providing students with a photocopied hand out. Lectures were about lecturers talking and students listening. Students took notes! If you did not attend a lecture you knew you might miss out on something important. None of this is relevant today. The introduction of computers in most teaching environments has led to the widespread use of 'power-point' slides to deliver lectures. Students expect to have this material available online through learning management systems such as WebCT. The introduction of on-line databases and 'e-readings' has made visits to the physical library irrelevant. Further advances include the introduction of 'eduStream' that provides students with online access to audio recordings of lectures. Purdue University (Podcastingnews, 2005) now offers podcasts of lectures where dynamic feeds are directly downloaded to students' MP3 players. Researchers identify the 'availability of web technology supported by powerful server and client-side programming techniques' that provide 'attractive alternatives for creation and distribution of dynamic and interactive educational materials' (Doulai, 1999). Research into 'e-learning' found that the main reason for absenteeism at university was 'whether enough other study material was available' (Naber & Köhle, 2004, p.1). If students can access the lecture slides and the audio on-line, why should they come to lectures? If they can access necessary readings online, why even bother coming to the University campus at all particularly when they have other lifestyle commitments.

Lifestyle

Many students are required to work. A recent report (Anderson, McInnis & Hartley, 2002) indicated that 72.5% of Australian university students have paid employment during semester, working an average of 15 hours per week. In addition, a relatively large proportion of Australian university students are mature-aged, with only 27.2% aged under 20 (Australian Vice-Chancellors' Committee 2001: 39). As a consequence, students are demanding more flexibility in the way they study. They want to access their learning activities in ways that fit in with their work and family commitments (McInnis & Hartley, 2002).

Attendance in the Faculty of Commerce

In 2005, there was growing anecdotal evidence that student attendance at lectures appeared to be declining across the University of Wollongong (UoW). All discipline areas appear to be suffering. Anecdotal evidence also suggests this trend has been occurring for several years but attendance is now worse than it has ever been. Tutorial or seminar attendance seems better than lectures, usually because tutorials have an assessment component or attendance is monitored. For example, UoW's Faculty of Commerce has a policy where students must attend 75% of tutorials or risk being failed for the subject. It may be that the pedagogy of university teaching has not changed with its customers' needs. Today's students have been raised on a diet of Sesame Street and Sony Play Stations. They are unlikely to be motivated by lectures following an instructivist or transmissive approach. But even tutorials that are more interactive are suffering. Many students attend only the minimum number of tutorials required to avoid failure or sit stoically through the ordeal with passive indifference. The outcome is that less students are involved in these timetabled events. Those who opt out of the face-to-face teaching appear to rely upon the text book and lecture notes made available on the web to gather enough information to pass the subject.

Declining attendance occurs to different degrees. At the Faculty of Commerce, there are subjects that are still well attended and subjects that have appalling attendance. For example, one of the OCTAL Award winners mentioned in the pre-amble, regularly achieves about 70% (120 students) at his lectures. These are held in the early afternoon on a Thursday. A colleague teaches another class involving many of the same students, on the same day, but at 6.30 pm. His attendance has sometimes fallen to as low as 7% (12 students). What is the reason for these figures? Is it the students? Is it is the lecturer? Is it the topic? Is it the time of the lecture? There may be something in this last point. Thursday night is traditionally a time for shopping or socialising in Australia. Another colleague explained the decline in enrolment in his subject from 180 students in 2004 to 110 in 2005 by the fact the lecture time had changed from Wednesday mornings to Fridays afternoons – a particularly unpopular time for students. But the lecture for MGMT389 International Business Management, the case study for this article, was held at 2.30 pm on Tuesday afternoons, a popular time. So the timing of the lecture should not be blamed, notwithstanding the difficulties of finding a car parking spot on campus!

How significant was the problem for MGMT389? Table 1 summarises attendance details for MGMT389 in Autumn session 2005.

Issue	Attendance	
	Student numbers	% (N=172)
Attendance at Week 13 Review Lecture[3]	115	66.9
Students who attended all lectures	28	16.2
Students who attended all tutorials	41	23.8
Average student attendance at tutorials (N=172)	9.6 tutorials out of 12	

Table 1: Attendance Statistics for MGMT389 (2005)

Table 1 shows that on average students attended 9.6 out of 12 or 80% of tutorials. However this needs to be considered in the context that students are required to attend 75% of tutorials or risk failing the subject[4]. For lectures, where attendance is entirely voluntary, attendance was only measured for those who completed the survey. These students claimed their average attendance at lectures was 10.5 out of 13 classes or 81% of all classes. Once again we need to consider this result in context. The survey results are based on the 67% of students who attended the final Week 13 lecture. This lecture reviews the subject and provides information on the exam and, therefore, is traditionally the second most attended lecture, after the Week 1 lecture. These results compare with other research on attendance: Dolnicar (2004) found 80% average attendance at lectures across all Faculties but much less in the Faculty of Commerce; Rodgers and Rodgers (2003) found 62% at lectures and 73% at tutorials; Rodgers (2001); found 68% at lectures and 80% at tutorials; while Romer (1993) described absenteeism at elite United States colleges as 'rampant' with a 67% attendance rate.

In considering the significance of the attendance problem for MGMT389 in 2005, the only obvious difference between the MGMT389 class in 2005 and past years was the decreased attendance at lectures. Random class rolls conducted during the 2004 class lectures indicated an average attendance of 75%, better than in 2005. But it was not the decline in attendance that really bothered Massingham and led to this research study. Rather, it was his perception of an apathy and passiveness amongst the students in 2005. This group just did not seem as interested in learning as past years. In 2005, the result was a passive learning environment in both the lectures and the tutorials. In the lectures, attempts to engage the students in discussion using various interactive techniques, often fell flat. Only a small number of students were willing to engage in discussion and this group were often reluctant to speak from fear of being seen as 'opinionated' or 'know-it-alls' by their peers. Massingham wondered why many students were unwilling to attend class and engage in the learning process. He suspected that the non-attendees did not see any value in attending class and wondered why. In looking for answers, the only obvious factors were the introduction of on-line access to the audio of lectures (eduStream) and the students themselves.

[3] This was the group of students surveyed for this study.
[4] School of Management and Marketing policy.

It was tempting to blame eduStream for the declining attendance in 2005 because it provides students with an easy option to miss lectures. However, we will see later in this article (see Table 2) that eduStream was not a significant factor. Indeed, its rating is similar to that for 'I didn't like the lecturer', so Peter can only blame the technology as much as himself! When we consider this point, the only other difference was the students themselves. Were they different compared with previous years? Or was their motivation more readily influenced by some other factor, such as the process or the lecturer? Before exploring these questions, Massingham considered whether student attendance really mattered at all and, if so, how this could be measured.

The most objective way of answering whether student attendance matters is the relationship between student attendance and performance. Recently, researchers have begun to empirically test whether absenteeism from university classrooms has a consequent effect on student learning (see Devadoss and Foltz, 1996; Marburger, 2001; Rodgers, 2001; Rodgers and Rodgers, 2003). Much of this research reports a strong association between attendance and performance but not a statistically sound causal relationship. Durden and Ellis (1995) found that excessive absenteeism impacted on the performance of economics students. Rodgers (2001) found a 'small but statistically significant' effect on performance, Rodgers and Rodgers (2003) claim to have found 'strong support for the proposition that class attendance has a significant effect on academic performance'. Our paper extends this research by examining the reasons why students do not attend classes and linking this to performance.

The aim of the research was then to examine student absenteeism from university classes. The specific research questions were:

1. What are the perceived reasons for non-attendance at university classes?
2. What relationship exists between perceived attendance and performance?
3. What relationships exist between the *depth* (class participation) and *breadth* (attendance) of student involvement in the learning process and student performance?

Research Method

The Case Study

The study was conducted at the completion of the autumn session 2005 at the University of Wollongong. The data was collected from a survey of a class of 172 students from the Faculty of Commerce, who completed a third year undergraduate subject. The class met for a two hour lecture and a one hour tutorial per week over a 13 week session. Lectures were delivered to the whole class and tutorials were given to seven groups ranging from 20 to 30 students each. The same lecturer (Massingham) delivered the lectures and the tutorials were shared between the lecturer and a tutor.

The survey took place at the start of the Week 13 lecture. This is traditionally a lecture where most students attend because it includes a discussion of the forthcoming exam. The surveys were distributed and the process was explained to students. Students were not required to identify themselves on the survey in order to ensure responses that were honest and not biased for fear of recriminations. Appendix 1 provides a list of the survey questions.

Assessment for the subject consisted of five components: a case study (15 per cent), research paper (20 per cent), mid term exam (10 per cent), class participation (5 per cent), and final examination (50 per cent). All assessments were double marked if students failed. The lecturer marked all of the exams to ensure consistency across the subject.

All assessments were directly related to content covered during the lectures and students were informed of this throughout the session. We controlled for bias towards students with high attendance rates over those with low attendance rates, in the following way:

1. All students had equal access to the subject's learning resources (e.g. subject outline, text book, additional readings in the library, and power-point slides from the lectures that were placed on WebCT intranet).
2. All students had equal access to the lecturer and tutor during classes and after class during consultation times.
3. All students had the opportunity to download the audio of the lectures from the intranet (eduStream).
4. The final examination was graded without any reference to the identity of the student (i.e. the front page, which includes the name and student number, was not referred to until the final grade for the student had been concluded).

The only learning component not directly available to students who missed classes was the opportunity to ask questions and otherwise involve them in the class discussion. Given that non-attendance was their choice, we believe that students had equal access to the examinable content in the subject.

Of the 172 students who completed the subject, 115 (67 per cent) attended the final Week 13 lecture and completed the survey. However, we had data on all 172 students in terms of their attendance at tutorials because enrolment records were maintained. We also had performance data on all 172 students. Therefore, we could examine the performance of all students in terms of their attendance. However, we could examine the attitudes towards attendance, that is, the survey, for the 115 students only.

Breadth and Depth of Learning

Measures of *breadth* and *depth* of learning were developed as a proxy for student involvement in the learning process. Breadth was measured in terms of student attendance, while depth was measured in terms of class participation.

Students were classified into three groups based on the breadth of their attendance. This was derived from each student's average overall attendance: Poor (attended 9.5 classes or less), Satisfactory (attended 10 to 11 classes), and Good (attended 11.5 to 12.5 of classes). The average was calculated by adding the number of lectures and tutorials attended and dividing by two. The maximum is 12.5 because there were 13 lectures and 12 tutorials. Descriptive statistics for each band are presented in Table 2

	Mean	Standard Deviation	N
All	10.5	1.6	115
Good (> 11 classes)	12	0.4	41
Satisfactory (10-11 classes)	10.6	0.4	41
Poor (< 10 classes)	8.2	1.2	31

Table 2: Descriptive Statistics for Class Attendance (i.e. breadth of attendance).

Students were classified into three groups based on the depth of their learning. This was derived from their level of class interaction and participation. We allocated students a Class Participation Grade (CPG) (maximum 5) based on the quality and quantity of their involvement in class discussion. We classified students into the following three groups based on their Class Participation Grade: Poor (<3), Satisfactory (3 to 4), and Good (4 to 5). Descriptive statistics for each band are presented in Table 3. Student attendance was a contributing factor in determining the CPG. For example, a student who attended all classes and actively contributed to the learning process, through useful questions and comments, would achieve a higher CPG than a student who equally contributed but attended less classes. The former student contributes more, overall, to the learning process and is rewarded with a higher CPG. Further details explaining how CPG were derived is provided in Appendix 2.

	Mean	Standard Deviation	N
All	3.5	0.9	115
Good (4-5)	4.4	0.4	35
Satisfactory (3-4)	3.5	0	50
Poor (< 3)	2.5	0.9	30

Table 3: Descriptive Statistics for Class Participation Grade Score.

It might be argued that CPG is an inadequate measure of depth of learning for several reasons. First, students might decide to forgo the opportunity to obtain 5 marks from this assessment for reasons explored in the results section of this article. For example, they may have been too busy to attend tutorials or to prepare for those tutorials they did attend. As a result, they might only be able to sit passively in class and, therefore, would receive a low CPG. Second, some students might lack the motivation or skills to engage in class discussion. They may still be learning through processes of listening and observation but their depth of learning would not be reflected in the CPG because they do not visibly demonstrate their learning. Despite these criticisms, we felt that CPG was an adequate measure of depth of learning because it allows us to observe whether students are engaged, understand, and can articulate this understanding with some level of insight. Further support for this approach is based on the fact CPG is an assessment task that is explained to students at the start of the tutorials, i.e. there is a reward for the desired behaviour.

Student Attitudes Towards Attendance

We surveyed the reasons for non attendance by providing respondents with a list of statements explaining reasons for non-attendance. Appendix 1 provides further details. Respondents were asked to rate their agreement with each statement using a using a 5-point Likert scale, where 1 = strongly disagree, 2 = disagree, 3 = not sure, 4 = agree, and 5 = strongly agree. The responses were aggregated and divided by the sample size to derive mean scores for each statement.

Student Performance

In relation to performance, students were classified into three groups, depending upon their final grade for the subject: Good (grades of 75% or higher), Satisfactory (grades of 50-74%), and Poor (grades below 50%). Descriptive statistics for each performance band are presented in Table 4

	Mean	Standard Deviation	N
All	62.2	14.1	115
Good (≥ 75%)	79.3	4.1	28
Satisfactory (50-74%)	61.2	6.5	70
Poor (< 50%)	36.7	6.1	17

Table 4: Student performance by classification band.

Results

Introduction

The results are presented as follows. First, we present the reasons why students do not attend lectures and tutorials. This addresses the first research question. Second, we examine differences in attitude towards attendance between good, average, and poor students. This addresses the second research question. Third, we explore whether the depth and or breadth of student involvement in the learning process influences student performance. This addresses the third research question.

Reasons for Non-attendance by Attendance and Participation Ratings

Table 5 shows the mean response for each questionnaire item for all students who responded to the questionnaire. The 95% confidence interval for the mean is shown for each performance group - both for attendance and participation ratings.

Cells with shading indicate a significant difference between the groups (Kruskal-Wallis test for independent samples $p < 0.0125$ – bonferroni corrected 0.05 $X^2_{df=2} > 13.4$). Where two cells within each shaded block are in bold and italic these groups appear to differ significantly from each other. Where a single cell is in bold and italic this group differs significantly from both other groups. Potentially significant differences between groups are assessed by identifying that groups' 95% confidence interval do not overlap with each other.

5a. Attendance at tutorials		Attendance			Participation		
	All	Good (n=35)	Satisfactory (n=50)	Poor (n=30)	Good (n=41)	Satisfactory (n=41)	Poor (n=33)
I was genuinely sick	2.64 (2.31-2.98)	***1.85 (1.35-2.36)***	2.51 (1.95-3.07)	***3.79 (3.22-4.36)***	1.94 (1.38-2.51)	2.76 (2.23-3.29)	3.27 (2.61-3.92)
Too busy	2.11 (1.83-2.4)	***1.22 (0.99-1.45)***	***2.12 (1.62-2.62)***	***3.21 (2.65-3.77)***	1.94 (1.4-2.49)	1.76 (1.36-2.16)	2.9 (2.34-3.46)
Had to work	2.05 (1.76-2.34)	***1.27 (0.96-1.58)***	2.29 (1.76-2.83)	2.73 (2.15-3.3)	1.8 (1.29-2.31)	1.96 (1.51-2.41)	2.5 (1.9-3.1)
The tutorials were boring (process)	1.51 (1.33-1.7)	***1.2 (0.97-1.42)***	1.46 (1.16-1.76)	***1.97 (1.54-2.4)***	1.26 (1.02-1.5)	1.36 (1.12-1.6)	2.07 (1.57-2.57)
The topic was boring	1.48 (1.32-1.64)	***1.2 (0.98-1.41)***	1.44 (1.17-1.71)	***1.88 (1.53-2.23)***	1.26 (1.02-1.5)	1.34 (1.13-1.55)	***1.97 (1.56-2.38)***
I didn't like the lecturer	1.31 (1.17-1.46)	1.2 (0.97-1.42)	1.22 (1.04-1.4)	1.58 (1.22-1.93)	1.17 (0.98-1.37)	1.14 (1.04-1.24)	1.77 (1.31-2.22)
I don't like the subject	1.37 (1.24-1.49)	***1.15 (0.98-1.31)***	1.24 (1.09-1.4)	***1.79 (1.47-2.1)***	1.2 (1.02-1.38)	1.24 (1.07-1.41)	***1.77 (1.45-2.09)***
I couldn't be bothered	1.38 (1.22-1.54)	1.17 (0.95-1.39)	1.32 (1.09-1.55)	1.73 (1.35-2.11)	1.34 (1.03-1.65)	1.24 (1.08-1.4)	1.67 (1.25-2.09)
5b. Attendance at lectures							
I was genuinely sick	2.45 (2.13-2.77)	***1.66 (1.23-2.09)***	2.41 (1.87-2.96)	***3.48 (2.91-4.06)***	1.94 (1.38-2.51)	2.28 (1.81-2.75)	3.33 (2.72-3.95)
Too busy	2.6 (2.29-2.91)	***1.63 (1.23-2.04)***	2.93 (2.38-3.47)	3.39 (2.85-3.94)	2.51 (1.89-3.13)	2.36 (1.89-2.83)	3.1 (2.52-3.68)
Had to work	2.24 (1.93-2.55)	***1.32 (1.01-1.63)***	2.63 (2.06-3.21)	2.91 (2.29-3.53)	2.09 (1.52-2.65)	2.1 (1.62-2.58)	2.67 (2.03-3.3)
Subject clash	1.39 (1.21-1.58)	1.24 (0.99-1.5)	1.54 (1.17-1.9)	1.39 (1.04-1.75)	1.26 (0.96-1.55)	1.46 (1.16-1.76)	1.43 (1.04-1.82)
The lectures were boring (process)	1.75 (1.53-1.97)	***1.37 (1.07-1.66)***	1.61 (1.27-1.95)	***2.39 (1.91-2.88)***	1.63 (1.21-2.05)	1.66 (1.33-1.99)	2.03 (1.59-2.48)
The topic was boring	1.6 (1.41-1.79)	***1.27 (1.03-1.5)***	1.59 (1.25-1.92)	***2.03 (1.62-2.44)***	1.43 (1.08-1.77)	1.54 (1.26-1.82)	1.9 (1.5-2.3)
I didn't like the lecturer	1.61 (1.4-1.82)	***1.32 (1.04-1.59)***	1.41 (1.17-1.66)	***2.21 (1.68-2.74)***	1.43 (1.08-1.77)	1.42 (1.17-1.67)	2.13 (1.6-2.67)
I don't like the subject	1.43 (1.28-1.57)	***1.17 (1-1.34)***	1.39 (1.17-1.61)	***1.79 (1.44-2.14)***	1.23 (1.01-1.45)	1.38 (1.17-1.59)	1.73 (1.39-2.07)
I couldn't be bothered	1.58 (1.39-1.78)	***1.27 (1-1.53)***	1.56 (1.22-1.9)	***2 (1.59-2.41)***	1.34 (1.02-1.66)	1.48 (1.21-1.75)	2.03 (1.58-2.49)
I can get the lectures on eduStream	1.65 (1.44-1.86)	***1.27 (1.01-1.52)***	1.71 (1.3-2.11)	***2.06 (1.64-2.49)***	1.63 (1.2-2.05)	1.46 (1.19-1.73)	2 (1.52-2.48)
I can pass the subject without attending lectures	1.48 (1.32-1.64)	***1.2 (1.01-1.38)***	1.39 (1.15-1.63)	***1.94 (1.56-2.31)***	1.29 (1.03-1.54)	1.34 (1.14-1.54)	***1.93 (1.54-2.32)***
Lectures are a waste of time	1.37 (1.22-1.51)	1.17 (1-1.34)	1.24 (1.06-1.43)	1.76 (1.35-2.16)	1.17 (0.93-1.41)	**1.24 (1.08-1.4)**	**1.8 (1.39-2.21)**

Table 5: Mean score for questionnaire item (range of 95% confidence interval in parentheses).

Statistical Procedure

A Kruskal-Wallis independent samples test (non-parametric equivalent of the one-way analysis of variance) was performed for each question to see if there was a significant difference in response between the different participation and attendance bandings. As this results in 40 different comparisons of the same data set the Bonferroni correction was applied to the p value (0.5/40 = 0.00125) and the questionnaire items for the individual were then compared by examining the overlap of the 95% confidence intervals by hand. Significant items are highlighted in table 5 and the significant differences within each group are presented in bold italic.

Reasons for Tutorial Non-Attendance by Attendance and Participation Ratings

Table 5a summarises these results. For the attendance grouping all questions excepting "I dislike the lecturer", and "I couldn't be bothered" resulted in significant differences, and for the participation grouping "the topic was boring" and "I don't like the subject" were the only two questions with significant differences. Overall, sickness, busyness and work were by far the source of the largest differences with the remaining significant questions showing about the same differences. Therefore, lifestyle factors had the most influence on breadth of learning (i.e. attendance at tutorials), while motivational factors had the most influence on depth of learning (i.e. participation at tutorials).

Reasons for Lecture Non-Attendance by Attendance and Participation Ratings

Table 5b summarises these results. All questions except "subject clash" and “Lectures are a waste of time” showed significant differences for Attendance ratings. When examining the differences by participation, only "I can pass the subject without attending" and "Lectures are a waste of time" were significant.

For Attendance, the largest effects are seen for the sickness, busy and work questions followed by "the lectures were boring" and "I can pass the subject without attending", thus questions pertaining to motivation. The other differences are much smaller. It was interesting to note that the motivation related questions were much more important for lectures than tutorials, perhaps indicating that motivational factors are of greater importance for non-compulsory classes compared to compulsory classes.

For Participation the differences are small – extremely small for the “lectures are a waste of time” question where no pattern emerges in the secondary analysis. Again this highlights the importance of motivational related questions. The results indicate that Participation rating is a much poorer grouping measure than Attendance.

Reasons for Lecture Non-Attendance by Performance

Table 6 summarises the median and inter-quartile range (median **±** IQR = range of 75% of the obtained values) for each questionnaire item. There was no significant difference between the different performance groups on the answers to the questionnaire. A Kruskal-Wallis test of the significance of the difference between the median answer for each group resulted in no questionnaire item showing significant differences. This indicates that academic performance does not determine the answer to each question. However, it must be noted that there was much less variability for the “Good” group, with at least 75% of the sample choosing the same answer for every question than the other two groups. Being that the questions are generally couched in negative terms and each item is marked “Strongly Disagree” by a firm majority of the ‘Good’ group, this indicates a more unanimous positive view of the lectures for this group than the rest of the questionnaire sample.

Reason	All (n=115)	Good (n=28)	Satisfactory (n=70)	Poor (n=17)
I was genuinely sick	1 (3)	1 (0)	1 (3.5)	4 (3)
Too busy	2 (3)	1 (0)	3 (4)	4 (3)
Had to work	1 (3)	1 (0)	1 (4)	2 (4)
Subject clash	1 (0)	1 (0)	1 (0)	1 (0)
The lectures were boring (process)	1 (1)	1 (0)	1 (1)	2 (2)
The topic was boring	1 (1)	1 (0)	1 (1)	2 (2)
I didn't like the lecturer	1 (1)	1 (0)	1 (1)	2 (3)
I don't like the subject	1 (1)	1 (0)	1 (1)	1 (1)
I couldn't be bothered	1 (1)	1 (0)	1 (1)	2 (2)
I can get the lectures on eduStream	1 (1)	1 (0)	1 (1)	2 (2)
I can pass the subject without attending lectures	1 (1)	1 (0)	1 (0.5)	2 (2)
Lectures are a waste of time	1 (0)	1 (0)	1 (0)	1 (1)

Table 6: Why Students Miss Lectures by Performance – Median response / 5 (Inter-quartile Range)

Reasons for Tutorial Non-Attendance and Performance

Table 7 provides an analysis of the reasons students miss tutorials by level of performance in the subject, using the same method as Table 6.

Reason	All (N=115)	Good (n=28)	Satisfactory (n=70)	Poor (n=17)
I was genuinely sick	1 (4)	1 (0.5)	1 (4)	5 (2.5)
Too busy	1 (3)	1 (0)	1 (3)	4 (3.5)
Had to work	1 (3)	1 (0)	1 (3)	3 (3)
The tutorials were boring (process)	1 (1)	1 (0)	1 (1)	1 (2)
The topic was boring	1 (1)	1 (0)	1 (1)	2 (2)
I didn't like the tutor	1 (0)	1 (0)	1 (0)	1 (1)
I don't like the subject	1 (1)	1 (0)	1 (0)	2 (1.5)
I couldn't be bothered	1 (0)	1 (0)	1 (0)	1 (1)

Table 7: Why Students Miss Tutorials by Performance Level – Median response (Inter-quartile range)

As with lecture attendance and performance, there is no significant difference between the groups when tested with a Kruskal-Wallis non-parametric analysis of variance. In general the pattern is similar to the attributed reasons for lecture non-attendance with the 'Good' group being almost as unanimous for tutorials as lectures, thus representing a more positive view of the teaching process for lectures as well.

The Timing of Classes, Absenteeism, and Performance

There was anecdotal evidence that the time of classes had an impact on student attendance. For example, classes scheduled on Fridays or Thursday nights are notoriously poorly attended. Given the findings that work commitments are an important reason for student absenteeism, we decided to examine whether there was a relationship between timing, absenteeism and performance. The analysis provides several findings. First, the lowest average attendance at lectures was the tutorial immediately following the lecture (tutorial 3) and the late evening class on Tuesday (tutorial 5). Tutorial 5's attendance supports the working student hypothesis. This late class is usually chosen by part-time students who work during the day and, therefore, are more likely to miss the lecture which is held during the day. However, Tutorial 3's attendance tends to disprove the proposition that time is important to attendance. This group immediately followed the lecture and, therefore, it is reasonable to assume that they would have the best opportunity to attend the lecture. This point is further supported by the fact that attendance at other tutorials held at far less popular times (e.g. 8.30 am) were better attended than Tutorial 3. This suggests that time may not be an influential factor and that we might look closer at the attitudes of the Tutorial 3 students, in particular, to identify the real cause of absenteeism. When we examined the factor ratings of the Tutorial 3 students, we found two important results. First, this group had stronger feelings of dislike about the teaching process (mean score of 1.82 compared with 1.51 for all students) and the lecturer/tutor (mean score of 1.95 compared with 1.61 for all students) compared with other tutorial groups. Second, there were a higher proportion of poor performing students in the group (32% compared to 24% for the whole class).

Student Attendance by Performance

We examined whether differences in attendance had an influence on student performance in the subject in two ways: breadth (average attendance) and depth (class participation grade) of learning. Tables 8 and 9 present the details of this analysis.

$X^2_{df=4}=15.7$ $p < 0.01$		Final Grade Rating		
		Good	Satisfactory	Poor
Attendance rating	Good	11	27	3
	Satisfactory	11	28	2
	Poor	6	15	12

Table 8: Contingency Table of Final Performance against Attendance Rating

Table 8 shows that increased attendance clearly has an effect on performance. Good and satisfactory attenders were more than twice as likely to be in the "Good" band for the final grade compared to poor attenders, and were much less likely to be in the Poor performance band.

The results are even clearer when we consider the 'depth' of student participation in the learning process, i.e. class participation grade (CPG), and performance. Only 1 "Poor" CPG student received a "Good" final grade, and very few "Good" and "Satisfactory" CPG students received a "Poor" final grade. This provides a clear finding that engagement in the learning process is much more important to student performance than mere attendance. The increased X^2 statistic for Participation versus Final Grade compared to Attendance versus Final Grade is clear evidence for this (see Table 9).

$X^2_{df=4}=67.5$ $p < 0.001$		Final Grade Rating		
		Good	Satisfactory	Poor
Participation rating	Good	22	15	3
	Satisfactory	8	48	9
	Poor	1	33	33

Table 9: Contingency Table of Final Performance against Participation Rating

Conclusions

This article contributes to our understanding of the reasons for student non-attendance at University classes. Our research objective was to understand student motivations so that we might find ways to better engage students in the learning process. University students include as their main reasons for not attending lectures and tutorials as being: busy, sick, at work, bored, having technology alternatives (eduStream), and the teacher. When there are no health and lifestyle factors involved, the most important influence on attendance is student attitudes to learning and motivation, such as "the topic was boring" and "I don't like the subject".

For classes considered compulsory (e.g. tutorials in this case), lifestyle factors had the most influence on breadth of learning (i.e. attendance at tutorials), while motivational factors had the most influence on depth of learning (i.e. participation at tutorials). This means that health and lifestyle factors are barriers to tutorial attendance and lack of interest or motivation are barriers to tutorial learning. It was interesting to note that the motivation related questions were stronger factors for missing lectures compared with tutorials, perhaps indicating that motivational factors are of greater importance for non-compulsory classes compared to compulsory classes.

The main factors influencing student attitudes are the teaching process used (i.e. motivating versus boring; constructivist versus transmissive; authentic versus theoretical) and the teaching style and personality of the teacher. Learning is a social construct and the relationship between teacher and student appears to be a significant factor in the breadth and depth of student involvement in the learning process and the learning outcomes. These points were particularly supported by the findings on lecture attendance, which is a 'voluntary' decision for students, rather than tutorials, which are perceived as necessary due to attendance requirements.

For lectures, there is clearly a group of students who do not attend because they feel they "can pass the subject without attending", "Lectures are a waste of time", and "the lectures were boring". However, it is important to note that there were few significant differences in attitudes towards lecture attendance by participation (i.e. CPG). This means that differences in attitudes towards lecture attendance are explained by breadth of learning but not by depth of learning.

At the same time it is clear that attendance has an impact on performance. Students who attended lectures and tutorials had a better chance of success on all assessment tasks in particular the final exam (see tables 8 and 9). Successful students attend lectures and tutorials; less successful students may have genuine reasons for non attendance.

Implications

Why should we care? As teachers, should we simply accept that the trend towards non attendance is inevitable, that we are being replaced by technology, our customers no longer need or want us, and we are becoming obsolete? However, the answer is not simply to increase attendance as Rodgers (2002) found. Even though students increased their attendance through an incentive scheme, performance remained the same. Clearly, the quality of the learning experience has to change. Some of us are stubborn enough to think that we may be able to add value in lectures and that just possibly, students may come to gain knowledge rather than information. Maybe it is not about attendance but about better teaching and learning processes.

Philips (2004) questions the traditional, lecture/ tutorial/ examination approach to teaching at university, considers research about learning, and then questions why university teaching and learning practices continue to be resistant to, and often inconsistent with, fundamental principles of learning developed through sustained scholarly enquiry. Some researchers argue that teaching should focus on a 'student-centered learning environment acknowledges that students use current knowledge to construct new knowledge, according to the constructivist epistemology discussed earlier (Duffy & Jonassen 1992; Marra & Jonassen 1993; Reeves & Hedberg 2002). Teachers' espoused theory is constructivist, student-centered, and outcome-based leading to 'deep' learning. While Philips argues that the 'theory-in-use' is instructivist, teacher-centered, content-based leading to surface learning, he questions why many university lecturers do not practice the espoused theory. The answer may lie with the students – are they willing and able to accept responsibility for their learning?

Biggs (1999) found that students who are instrumentally motivated are likely to adopt a surface approach to studying, which does not lead to high quality learning. In Ditcher and Hunter's study (2004), academic staff were surveyed about the impact of student behaviour on learning. This lecturer was concerned that instrumental students were concerned with gathering information, rather than knowledge. The result was an ability to remember but not to think deeply:

> *They seem far more pre-occupied with figuring out what "they need to know" and getting my notes, than reading independently or synthesising material themselves. This concerns me because we end up training students that are good at regurgitating lecture material, but hopeless at assessing new ideas critically, or even proposing new ideas themselves. (Ditcher and Hunter, 2004, p.5).*

Some staff felt that the behaviours of instrumental students were symptomatic of a lack of personal responsibility on the students' part:

> *It seems to me that the underlying problem is lack of personal responsibility on the part of many students and the impact this has on the entire culture of the University ... In my experience, it is very rare for a student to accept responsibility for themselves [sic] and their learning. (Ditcher and Hunter, 2004, p.5).*

Inappropriate attitudes to learning are not innate and invariant. Students develop these attitudes because they have experienced a level of success in educational environments that do not support deep understanding and a 'thirst' for knowledge and understanding. We should recognise that these attitudes exist and put in place environments that support appropriate learning strategies.

Pedagogical approaches to education are shifting from teacher-centred approaches, where the emphasis is on individuals receiving knowledge to student-centred approaches where knowledge is collaboratively constructed through engagement in significant and authentic problems reflecting those encountered in the real world (Herrington & Oliver, (2000). These learning environments can be readily developed across all educational disciplines (cf. Herrington & Herrington, 2006). Students who learn in these environments develop higher order processes or graduate attributes that are demanded by society.

Technology is becoming pervasive in education but its benefits are unclear. If technology is used to mirror and perpetuate traditional forms of pedagogy such as acting as a repository of factual (oral or text) information then at best it will be used as a poor alternative to lectures as it is by many of our current students; at worst it will continue the belief that knowledge is passively transmitted from one individual to another for the sole purpose of memorisation and replication. On the other hand, the affordances of technology can provide the tools for creating authentic learning environments and fostering the communication channels that support the social construction of knowledge and understanding.

But why engage in the learning process if the knowledge for performing successfully can be gained without thought and effort? If our assessment practices rely on replication of factual information and if this is easily gained through passively attending lectures and or headphones attached to my MP3 player then again it is easy to see why some students will not engage. The final piece in the jigsaw and the one most often lost is assessment. If we want students to attend and be rewarded by that attendance then we need to think more carefully about assessment. Instead of the traditional end on approach to assessment we need to integrate our assessment with the tasks by which students learn. The outcome of the learning task becomes the assessment and not some far away facsimile as is often the case with end of semester exams.

In summary, changing students' attitudes and approaches to learning relies on a change in teacher attitudes towards teaching, assessment and technology. A change in students' and teachers' attitudes may well see a resurgence in class attendance.

Appendix 1

Survey Questions

1. Which tutorial class did you attend?
2. How many tutorials did you attend?
3. Why did you miss tutorials? Please indicate how strongly you agree with each of the following statements using the following scale.
   Strongly disagree = 1, Disagree = 2, Not sure = 3, Agree = 4, Strongly agree = 5.
   - I was genuinely sick
   - Too busy
   - Had to work
   - The tutorials were boring (process)
   - The topic was boring
   - Didn't like the tutor
   - I don't like the subject
   - Couldn't be bothered

4. How many lectures did you attend?
5. Why did you miss lectures? Please indicate how strongly you agree with each of the following statements using the following scale.
   Strongly disagree = 1, Disagree = 2, Not sure = 3, Agree = 4, Strongly agree = 5.
   - I was genuinely sick
   - Too busy
   - Had to work
   - Clash with another subject
   - The lectures were boring (process)
   - The topic was boring
   - Didn't like the lecturer
   - I don't like the subject
   - Couldn't be bothered
   - Get the lectures on eduStream
   - I can get through the subject without going to lectures
   - Lectures are a waste of time

6. Please add any comments you wish to make on why you didn't attend lectures in this subject

7. Do you think having lectures available on eduStream is a good thing? Yes/No

8. Why do you feel that way?

Appendix 2

Class Participation

The following is extracted from the 2005 Subject Outline for MGMT389 International Business Management.

Assessment 2:	**Title: CLASS PARTICIPATION**
Guidelines	Students will be required to actively participate in the subject. Class participation includes contribution to class discussion including questions, comments, reflection, sharing experiences and feelings, and feedback on Case Study presentations. The specific criterion explaining this assessment is provided in the section on assessment criteria that follows. Students will be awarded a grade out of 5 marks for the subject for class participation.
Classification	This is a **category 3** assignment. Refer to guidelines at the end of this subject outline.
Marking criteria	Students that attend all tutorials and actively participate will be awarded 5/5. By active participation, we mean you are involved in the discussion, either by posing questions, making comments or observations that contribute to the learning process. We are more interested in the quality of comments rather than quantity, so we would classify two or three insightful comments per class as an active contribution. Students that miss one or two classes but are still actively involved will be awarded 4/5. Students that attend all classes but only contribute occasionally will be awarded 3/5. Students that attend only the minimum number of classes (i.e. 75%) but contribute when in attendance will be awarded 2/5. Students that attend only the minimum and occasionally contribute will be awarded 1/5. Students that attend the minimum and do not contribute will be awarded 0/5.
Length:	Participation in tutorials
Weighting:	5%
Due date	Grades will be awarded at the completion of the tutorials

References

Australian Vice-Chancellors' Committee (2001). *Key Statistics on Higher Education.*

Beard, R. & Senior, I. (1980). *Motivating Students.* London: Routledge and Kogan Paul.

Biggs, J. (1999). *Teaching for quality learning at University.* Buckingham, UK: Society for Research into Higher Education & Open University Press.

Bligh, D. A. (1972). *What's the Use of Lectures*. Harmondsworth, UK, Penguin.

Bliss, J. and Ogborn, J. (eds.) (1977) *Students' Reactions to Undergraduate Science.* London: Heinemann.

Brown, G. and Atkins, M. (1988) Helping Students Learn. In *Effective Teaching In Higher Education*. London: Routledge.

Browne, S. and Race, P. (2002) *Lecturing: A Practical Guide*. London: Kogan Page.

Coxon, E., Jenkins, K., Marshall, J. & Massey, L. (1994). *The politics of learning and teaching in Aotearoa - New Zealand.* Palmerston North, NZ: Dunmore Press.

Devados, S. and Foltz, J. (1996), Evaluation of Factors Influencing Student Class Attendance and Performance, *American Journal of Agricultural Economics*, Vol. 78, No. 3, pages 499-507.

Ditcher, A. and Hunter, S. (2001). The instrumental student: An increasing problem? In L. Richardson and J. Lidstone (Eds), *Flexible Learning for a Flexible Society*, 202-212. Proceedings of ASET-HERDSA 2000 Conference, Toowoomba, Qld, 2-5 July 2000. ASET and HERDSA.

Dolnicar, S. (2004), What Makes Students Attend Lectures? The Shift Towards Pragmatism in Undergraduate Lecture Attendance, In Australian and New Zealand Marketing Academy - ANZMAC 2004: marketing accountabilities and responsibilities : proceedings: 29 November - 1 December 2004, Wellington', edited by J Wiley and P Thirkell, Wellington, N.Z.

Duffy, T. M. and D. H. Jonassen, (Eds). (1992). *Constructivism and the Technology of Instruction, A Conversation*,. New Jersey, Lawrence Erlbaum Associates.

Durden, C. & Ellis, L. (1995). The effects of attendance on student learning in principles of economics. The American Economic Review, 85(2), 343-346.

Doulai, P. (1999), Preserving the Quality of On-Campus Education using Resource-Based Approaches, *In Proceedings of the WebCT Conference on Learning Technologies: From Innovation to Implementation (WebCT'99), pages 97-101, Vancouver, Canada, June 1999.*

Exley, K. and Dennick, R. (2004) *Giving a Lecture: From Presenting to Teaching.* London: Routledge.

Feldman, K.A. (1976), The Superior College Teacher from the Students' View. *Research in Higher Education,* 30: 583-645.

Feldman, K.A. (1989), The Association Between Student Ratings of Specific Instructional Ratings of Specific Instructional Dimensions and Student Achievement. *Research in Higher Education*, 30: 583-645.

Herrington, J., & Oliver, R. (2000). An instructional design framework for authentic learning environments. *Educational Technology Research and Development,* 48, 23-48.

Herrington, A.J., & Herrington, J.A. (2006). *Authentic Learning Environments in Higher Education*. Hershey, PA: Idea Group.

Isaacs, G. (1992) Ends and Means: What Learning Goals are Served by What Methods? *Research and Development in Higher Education*, 15: 205-212.

Land, M.L. (1985) Vagueness and Clarity in the Classroom. In T. Husen and T. N. Postlethwaite (Eds.) *International Encyclopaedia of Education: Research Studies.* Oxford: Pergamon Press.

Laurillard, D. (1993) *Rethinking University Teaching: A Conversational Framework.* London: Routledge.

Marra, R. and D. Jonassen (1993). Whither Constructivism. In D. Ely, Minor, B. (Ed.) *Educationa Media and Technology Yearbook.* (pp. 56-77) Englewood CO, Libraries Unlimited, Inc. Published in cooperation with ERIC and AECT.

Marburger, D.R. (2001), Absenteeism and Undergraduate Exam Performance, Journal of Economic Education, Vol 32. No. 2, pages 99-109.

Marton, F., & Säljö, R. (1976). On qualitative differences in learning. I: Outcome and process. *British Journal of Educational Psychology*, 46, 115-27.

McInnis, C., & Hartley, R. (2002). *Managing Study and Work: The impact of full-time study and paid work on the undergraduate experience in Australian universities*. Department of Education, Science and Training, Commonwealth of Australia.

McKeachie, W. (1994) *Teaching Tips*. Lexington: Heath.

Murphy, E. (1998) *Lecturing at University*. Perth: Paradigm Books.

Naber, L. and Köhle, M. If e-Learning is the Answer, what was the Problem? Institute for Software Engineering and Interactive Systems, Vienna University of Technology,

Phillips, R. (2005), Challenging The Primacy Of Lectures: The Dissonance Between Theory And Practice in University Teaching, *Journal of University Teaching and Learning Practice*, Vol. 2, Iss. 1.

Podcastingnews (2005). Purdue Plans Academic Podcasts http://www.podcastingnews.com/archives/2005/08/purdue_plans_ac.html [Accessed 16/10/05]

Race, P. (Ed.) (2002) *2000 Tips for Lecturers*. London: Kogan Page.

Ramsden, P. (1992*) Learning to Teach in Higher Education*. London: Routledge.

Reeves, T. C., & Hedberg, J. G. (2002). *Interactive Learning Systems Evaluation.* Educational Technology Press.

Rodgers, J.R. (2001), A panel-data study of the effect of student attendance on university performance, *Australian Journal of Education*, Vol. 45, No. 3, 2001, 284-295.

Rodgers, J.R. (2003). Encouraging tutorial attendance at university did not improve performance. *Australian Economic Papers*, 41, 255-256.

Rodgers, J.L. and Rodgers, J.R. (2003), An Investigation into the Academic Effectiveness of Class Attendance in an Intermediary Microeconomic Theory Class, Education Research and Perspectives, Vol. 30. No.1.

Romer, D. (1993), Do Students Go to Class? Should They? *Journal of Economic Perspectives*, Vol. 7 No. 2, pages 167-174.

Sheffield, E.F. (1974) *Teaching in Universities: No One Way.* Montreal: Queen's University Press.

Solomon, D. Rosenberg, L. and Bezdek, W.D. (1964) Dimensions of Teacher Behaviour. *Journal of Experimental Education*, 33: 23-401.

Snyder, B. (1971). *The hidden curriculum.* Cambridge: MIT Press.