Do accountants tell it how it is? Do marketers like to solve open ended problems? A comparative reflection on learning design.

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Draft paper: comments welcome but please do not quote without asking first.

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Introduction

Learning design is a relatively niche and unexplored area of educational research in comparison to fields such as attitudes to learning or student learning styles. However we believe that 'best' educational practice is built on an understanding of this core concern. Learning design fundamentally affects delivery and thus has the potential to accelerate and enhance the knowledge transfer partnership between tutor and student (Kirschner, van Vilsteren, Hummel & Wigman, 1997). Equally, inappropriate learning design might obfuscate teachings added value.

In addition, with both the growth of the capabilities and usage of the Virtual Learning Environment, the popularity of e-learning and the pressures on staffing in Higher Education, the use of learning design technologies will become even more important in the future. Therefore we should be focusing on the technologies available and the approach taken towards them.

Learning design is a field which is often overlooked by researchers for several reasons. Firstly, the field is dominated by comment and discussion of the software design, its limitations and its purposes. This acts as a barrier to entry to many seeking to contribute to the debate. Secondly, it is thought that learning design is a tutor specific issue and general conclusions are fundamentally flawed as overly prescriptive learning design will yield poor classroom performance. Thirdly, teacher's approaches to learning design have seldom been correlated to student attitudes to learning. This paper attempts to open up the learning design debate by addressing these three concerns and re-examining the original and fundamental underpinnings of learning design.

We hope that an investigation of these issues will aid learning design project developers and consultants to work towards a functioning system that is fit for purpose. This will lead to a better understanding of the level of flexibility required in the software and might help anticipate issues before they arise. This paper also hopes to foster and encourage more correspondence and debate at the front end of the learning design issue.

Background

Learning design: software issues

As stated above, the learning design literature has been dominated by software issues. Few have examined the relationship between the plethora of learning design options and the student experience (see Conole and Fill, 2005). These debates include discussions of software supporting learning design (Harrer, Malzahn, Hoeksema & Hoppe, 2005) and successful adoption of software (Berggren, Burgos, Fontana, Hinkelman, Hung, Hursh, & Tielemans, 2005). On occasion the software has failed to fulfil its original remit and therefore champions of learning design software projects have adapted the software (Specht & Burgos, 2007; Milligan, Beauvoir, Sharples, 2005) and built on it to include variability in the design to facilitate reusability (Knight, Gašević, Richards, 2005) which is highly sought by teachers. The software has also been adapted to improve delivery (Pacurar, Trigano, Zamfirescu, 2005) and to add the necessary complexity to facilitate advanced learning strategies such as argumentation (Harrer, Malzahn, Hoeksema and Hoppe, 2005) and testing (McAndrew, Nadolski, Little, 2005)

Research has also sought to investigate how teachers might overcome knowledge-based adoption problems (Pacurar, Trigano, Alupoaie, 2005) and extensive cases have been built arguing why institutions should adopt the software (Calverley, 2005).

Though these discussions are vital to the application of the learning design, the underlying ethos of 'design for learning' is being overlooked in these narrow debates. This paper refocuses the debate on the front end problem, in other words, identifying what the learning design software can achieve and what it should be seeking to achieve.

Design for learning. One size fits all?

It has been proposed (Britain, 2004) that there are three general ideas behind the development of any appropriate learning design. Firstly, it is stated that students learn better when they are "engaged in a learning activity" (p.2). Secondly, sound structuring of teaching and learning activities is central to facilitate learning. Thirdly and finally it is proposed that sharing and re-use of learning designs will complete the teaching and learning cycle. Learning design theory and practice is being built upon this bedrock of general principles. This paper seeks to examine the absoluteness and uniformity of these statements.

The first of these general ideas correlates closely to the student learning approaches conclusions of commentators such as Entwistle (1997, 2003) and Ramsden (1992). This argument is almost as old as rational thought, for example, Cofucius has been ascribed the statement: 'I hear and I forget. I see and I remember. I do and I understand.'

This paper asks whether this is the *best* possible design for learning, whether the structure of the instructional material matters and whether it is reusable. We believe that by investigating two different subject disciplines with two contrasting teaching styles, it will re-engage the debate about the founding principles on which learning design debate is being built.

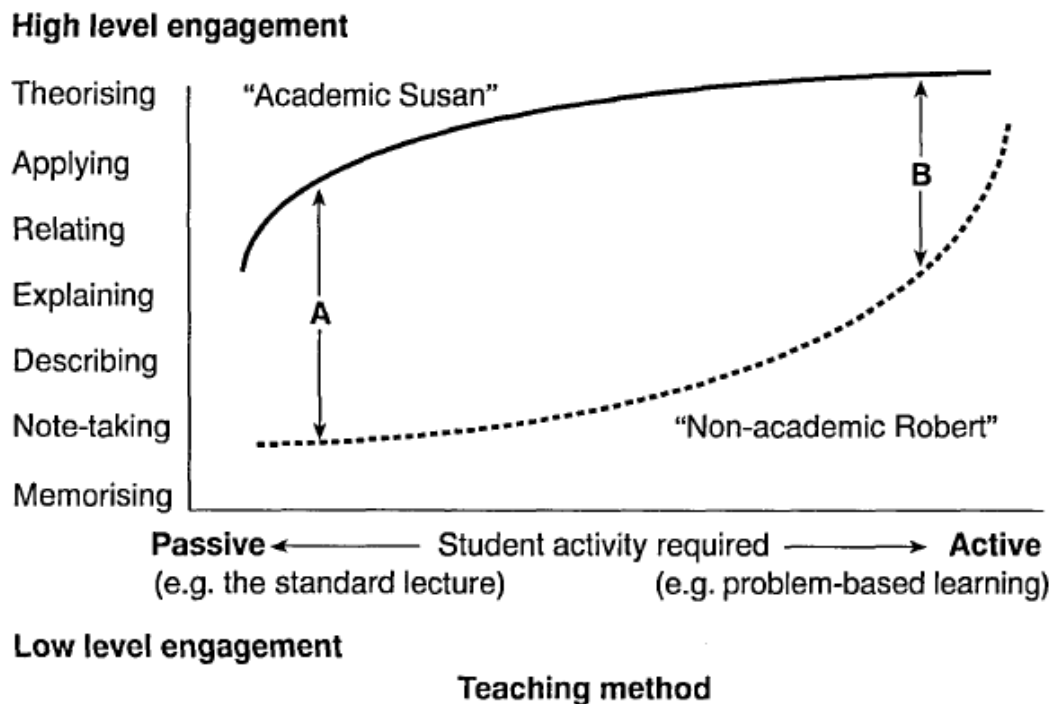**Design for learning: student approach**

Biggs (1999) wrote a seminal critique of the interaction between student and tutor. His study built on prior work regarding conceptions of teaching (for example Martin & Balla, 1991; Samuelowicz & Bain, 1992; Prosser & Trigwell, 1998) and approaches to learning (for example Marton and Säljö, 1976; Entwistle & Ramsden, 1983; Biggs, 1979, 1987; Marton, 1981; Marton and Booth, 1997). Prior work has tended to focus on whether a deep learning approach can be correlated with high quality teaching. Biggs (1999) moved this debate forward by asserting that high quality teaching can be defined as student-focused teaching (also see Trigwell, Prosser and Waterhouse, 1999). Learning design researchers must therefore be acutely aware of this research as it has the ability to invalidate teaching and learning claims of the software developers.

Biggs (1999) first highlighted that there has been a fundamental shift in the orientation of higher education students and that classrooms are now open to academic and non-academic students alike. We believe that not only has there been a shift in orientation in the classroom there has also been a shift in learning style and learning solutions.

In line with Prensky (2006), Carden (2007), Cameron (2007) and many others we believe that the learning design debate adds a secondary perspective to this field of study - approaches to learning - as the *Google generation's* needs and wants have shifted the teaching landscape suddenly. Students have been fed a constant diet of technological solutions, prior to their higher education experiences, to learning problems and yet the traditional higher education teaching system is not geared up to provide the solutions this new generation of students have become accustomed to. The pace of change has overtaken many academics who still choose to use outdated technologies which fail to engage the students. Biggs (1999) argued that this engagement in the learning process is crucial to achieving deeper learning.

It has been necessary and continues to be necessary for teaching and learning methods to be re-appraised constantly. There is a natural order of events because as students' attitudes and capabilities change, their motivations change, their learning styles change and therefore teaching methods must adapt to fulfil the educational intention.

Figure 1 Student orientation, teaching method and level of engagement

High level engagement

Source: Taken from Biggs, 1999

Design for learning: Teaching methods

Biggs (1999) analysed teaching methods onto a scale ranging from passive through active and mapped those to student's orientation, i.e. academic through non-academic. The conclusions were that everyone benefits from active learning styles (see Figure 1). Fisher (2005) summarises the position differently (Figure 2) but with the same conclusion - a drive towards student centred teaching is highly preferable. Thus, the three general principles laid down by Britain (see above, 2004) appear at first glance to be robust.

Figure 2: Graduate competencies

Teacher Centred		Learner Centred
• Content focussed	⇒	• Process focussed – learn to learn
• Memory	⇒	• Critical thinking
• Rote learning	⇒	• Ability to communicate
• Individual testing / competitive	⇒	• Ability to work in teams / collaborate
• Problems not 'real'	⇒	• 'Authentic' problem solving
• Set tasks	⇒	• Project based learning
• Within discipline	⇒	• Cross disciplinary learning
• Rigid timetables & supervision	⇒	• Ability to self organise/self-directed

Source: Fisher (2005)

Biggs (1999) concluded that teaching methods have a measurable impact on students with certain methods maximising the deep learning approaches, namely, problem based learning and the learning portfolio. This conclusion echoes the learning design formula. We are told by Biggs (1999, p.60) that "the surface approach [to learning] is… to be discouraged, the deep approach encouraged - and that is my working definition of good teaching." It has been argued by Bamber and Parry (2008) that this 'one size fits all' approach might not be wholly appropriate in all circumstances.

We do not dispute that in a utopic academic environment where study might be wholly theoretical this would probably be the *best* teaching method for all students. However, there are courses, such as accounting and marketing where the onus is on real-world practicality reflected in classroom learning. Tuition in these subject disciplines seeks to develop learning skills for life, not necessarily a short-term assessment strategy such as to pass an examination.

In addition, our study investigates marketing and accounting tuition and students. These are programmes of study which are taught in very different ways. The marketing approach tends to be a problem based learning approach whereas the accounting teaching tends to be of a more didactic nature and thus a more 'telling' rather than teaching approach. This paper reflects on whether there is a preferred learning design for both.

Design for learning: the key ingredient

Barber and McKinsey (2007) reported that "raising the status and quality of teachers must be at the heart of any attempt to create a world-class education system". They undertook an international study which highlighted the fact that well-intentioned school reforms have failed for decades in many countries despite massive spending increases, smaller class sizes and greater school autonomy because they overlooked the teachers. Barber and McKinsey (2007) concluded that the quality of an education system depends ultimately on the quality of the teachers themselves.

Whilst Barber and McKinsey (2007) were not looking at Higher Education specifically, the three concepts discussed in this paper of student engagement, structured teaching and learning activities and the question of standardisation or reusability of learning design are highlighting that the key ingredient to student learning excellence is the individual teacher. Christine Gilbert, the chief inspector of schools has recently called for a renewed focus on "the craft of teaching" and a team of education academics called for teachers to be more included in developing future education policy.

The role of learning design

It is fundamental that learning design software should be able to fulfil the requirements of the student and the teacher. In addition, individual subject disciplines also need to be considered in more detail. Prior researchers have argued that the generic conclusions of earlier learning approach studies (such as those by Marton and Säljö, 1976 or Ramsden, 1992) do not neatly correlate to specific findings. Accounting commentators such as Byrne, Flood and Willis (2002), Meyer and Eley (1999), Neumann (2001), and Lucas (2001) have argued that accounting as a subject would benefit from being identified separately when seeking to ascertain attitudes to learning.

Accounting tutors and marketing tutors alike believe that not only are the learning approaches of their students potentially different to other students but also due to the nature of the material required to deliver, there is a difference in delivery techniques to certain other disciplines. Therefore the teaching approach adopted by accounting and marketing tutors also needs to be looked at separately.

Accountants are not alone in their search for understanding of their own students and the teaching approach employed to get the most out of the students. Commentators from other disciplines have also sought rational explanations in their own disciplines with relative arguments as opposed to the general conclusions of student attitude or teacher approach work. Reid, Duvall and Evans (2007), for example, looked at medicine and identified a natural leaning towards strategic learning. Newble and Gordon (1995) believe that this approach is due to the assessment focus rather than the students. However, twelve years passed between the two studies and the attitude didn't appear to change.

Marketing and entrepreneurship education literature also argues that a different learning environment is required to support the study of these disciplines in a university setting (See for example Gibb 2002). Jones (2007) stated that to best provide a mix of enterprising skills and behaviours to manage a business, a teaching style that is action-oriented encourages experiential learning, problem solving, project based learning and creativity. Jones continued by drawing attention to the traditional business school methodology of the lecturer-centred, passive learning approach that is widely used for management, information systems and accountancy teaching and

stated that marketing and entrepreneurial studies cannot be satisfied by such an approach.

It is not only learning approaches that are examined by commentators but also learning styles. Peters, Jones and Peters (2007) identified auditory, kinaesthetic and group styles as most preferable for sports related undergraduate programmes. It is probable that these learning styles would not yield the greatest academic returns for an accounting student but that does not mean that they are unacceptable. It would be wrong to consider that there should be only one student learning style or one teaching approach that suits everyone.

The issue for learning design specialists is why these disciplines are different and can the design manage the flexibility required.

Aims

In this paper we re-address the student learning approach : teaching method issue from a design for learning perspective. Students' approaches, attitudes and expectations are vastly different to those analysed by earlier studies, such as Marton and Säljö (1976), Ramsden (1992) or even Biggs (1999). Technology has moved on and distance learning is now firmly on the Higher Education agenda (see Leitch Review, 2006). It seems obvious that if we are going to formulate a practical and efficient learning design we must first ensure that the outcome is possible, i.e. a model can be designed that captures the needs of all stakeholders. Learning design experts have focused on reusability and adaptation but we ask how adaptable a learning design has to be to be able to provide an efficient resource for these different groups of students and ultimately whether this flexibility is achievable in the short-term.

To enable this discussion we have investigated the approaches taken by accounting and marketing students and the approaches taken by accounting and marketing tutors in a face to face learning design. The approaches of both students and tutors are different but the required end result is identical.

We have structured our debate around the three general underlying principles of the learning design manifesto as outlined by Britain (2004). We address each of these principles firstly from an accounting perspective, then from a marketing perspective using Biggs' (1999) student orientation, engagement and preferred learning approach model (figure 1) as our platform for debate.

Approach

The project sets out to quantitatively and qualitatively investigate preferred learning designs based on subject specific student approaches. Ultimately the question being posed in this project is more in line with 'why' rather than 'what' and therefore a mixed methods approach is preferable. This method is "particularly well suited to new research areas or areas for which existing theory seems inadequate" (Eisenhardt, 1989) – which are characteristics borne by this investigation

The quantitative focus of the project rests on a questionnaire which was designed by the researchers to enable a scaleable result. The qualitative analysis for this paper concentrates on the data from organised student focus groups. This method of data collection has been recognised as a highly effective means for studying education and training (Field, 2000).

The questionnaire allowed us to measure the perceptions of the students attitudes to their own learning orientation and the teaching methods employed before the focus groups took place.

When seeking a measurement device we initially looked to the Approaches to Teaching Inventory (ATI) (as used by Trigwell and Prosser, 2004). However, we felt the inventory did not suit our purpose partly because it is designed to be completed by the tutor and partly because it left gaps in our questioning. When the tutor completes the survey it is our contention that this is potentially overly subjective and therefore also potentially biased. It seemed more appropriate that we design an inventory that the students complete to eliminate the bias.

We retained elements of the ATI and reversed the questions to be answered from a student perspective rather than a tutor perspective. We also undertook a review of Biggs' (1999) paper to establish how he proposed to scale the students on his chart (seen above in figure 1). We identified the key issues and translated them into statements that students could agree with (5) or disagree with (1) on a five-point likert scale.

These statements were then scaled into categories – academic through non-academic; active through passive. We then analysed the sensitivity of these results and mapped polynomial trend lines onto the charts to address whether Biggs' conclusions were echoed by our study and whether the learning preferences of marketing students and accounting students were similar. These findings directed the focus group discussions.

We randomly selected participants for focus groups from our sample. The focus groups were semi-structured and involved open-ended questions. Participants were allowed to deviate from the questions if this aided the flow of the discussion. When appropriate these issues were explored in more detail. The focus groups were digitally recorded and transcribed.

Findings

The first issue was to judge each student's academic ability. We asked the students to mark on a seven point likert scale (represented as a line) how academic they thought they were. It is clearly shown that '1' meant 'not academic at all' and '7' meant 'very academic'. We stressed to students that academic related to both the level of qualifications, the grades achieved in them and their own perception of their academic abilities. This provided us with the ability to scale our X-axis for the results for presentation purposes.

To ensure the significance of these results we also asked a series of questions which addressed this academic claim. In effect these were control questions to facilitate a correlation between their perceptions of academic qualities and educational interpretations of what it is to be academic.   For both accounting students and marketing students we found a very strong correlation between the students' perceptions of academic intention and their own academic abilities making the results shown below significant.

Our research also addresses the question of teaching and learning preference. It is claimed by Biggs (1999) that deeper learning is achieved by reference to high level engagement. This high level engagement has a seven point scale for Biggs (shown in figure 1) starting at memorising as the lowest level of engagement and rising to theorising as the highest level of engagement.   In line with other commentators (such as Trigwell and Prosser, Entwistle and Ramsden) Biggs is presenting a picture that indicates the higher level of engagement the deeper the learning and the greater the satisfaction of the students regardless of their academic nature. We translated this seven point scale and asked students about their preferred learning and teaching methods. Point '1' on the scale meant the student perceived themselves as preferring a passive and teacher-focused approach and '7' as preferring an active and student-focused approach. This enabled us to scale a Y-axis to match the seven point X-axis showing academic orientation.

As with our internal test on academic orientation, we also asked a series of control questions that allowed us to qualify the significance of the results. Again, students' perceptions of passive teaching and learning correlated positively for both accounting and marketing students to the academic interpretations of active and passive teaching. Therefore the results presented below are significant.

Accounting students

We chose to investigate a first year accounting course and a master's level financial reporting class both of which ran over two semesters during the academic year 2007/08. Unfortunately the latter of these groups had a poor[1] response rate and therefore the results are not presented as part of the analysis below. Of the 35 first year students asked to complete the questionnaire, 33 responded, giving a response rate of 94%. Figure 3 summarises the non-academic students' polynomial trend line and figure 4 summarises the academic students' polynomial trend line. Figure 5 shows a picture of academic and non-academic students combined.

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[1] The response rate was 21.33%. It is interesting to note that in this discussion of learning design and e-learning, the questionnaire was emailed to students using our black board system and only 16 of 75 students responded.

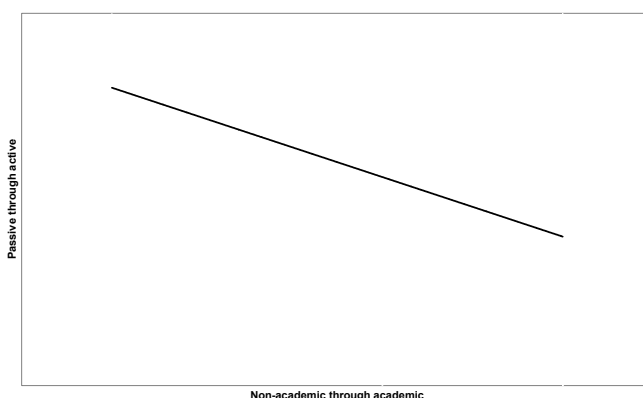**Figure 3 Non-academic preferred teaching and learning method**

Passive through active

Non-academic through academic
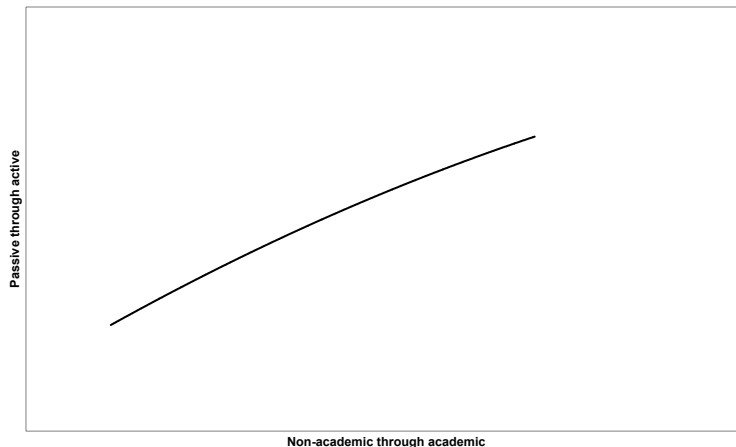
General principle 1: 'Students learn better when they are engaged in a learning activity'

The results of the non-academic students reflect the general principle exactly. According to teaching and learning theorists we note that as students' academic abilities increase, so do their preferences to engage in more active learning styles. Though this does not map precisely against Biggs' (1999) predictions it certainly fits the model. It would appear that non-academic students would prefer passive teaching methods. However, the more academic the students become the more aware they are of the benefits of a more active approach.

A more active approach will facilitate the higher level skills required in higher education such as explaining, relating, applying and theorising.

Figure 4 Academic preferred teaching and learning method

Passive through active

Non-academic through academic

However, more intriguingly is the pattern outlined by the responses of the more academic students (in figure 4). We note that as the level of perceived academic ability increases, the preferred teaching and learning method

becomes more passive rather than the expected preference to more active methods.

This poses a difficult problem for us to try and reconcile as it is in direct conflict with Biggs' (1999) position. Therefore it was necessary to follow this analysis up in the focus groups and analyse the qualitative data for solutions to this issue.

Figure 5 presents the quantitative data from the entire sample, in other words, the academic and non-academic students combined. The mean was derived for both academic orientation and teaching and learning approach. This was used as the mid-point for both axes. The data presents a more uniform picture in line with academic theory. As students become more academic their preferred teaching and learning approach becomes more active. It is worth noting however that there are a number of outliers which makes a multiple order trend line show a more volatile picture.

Figure 5 Academic and non-academic students combined preferred teaching and learning method
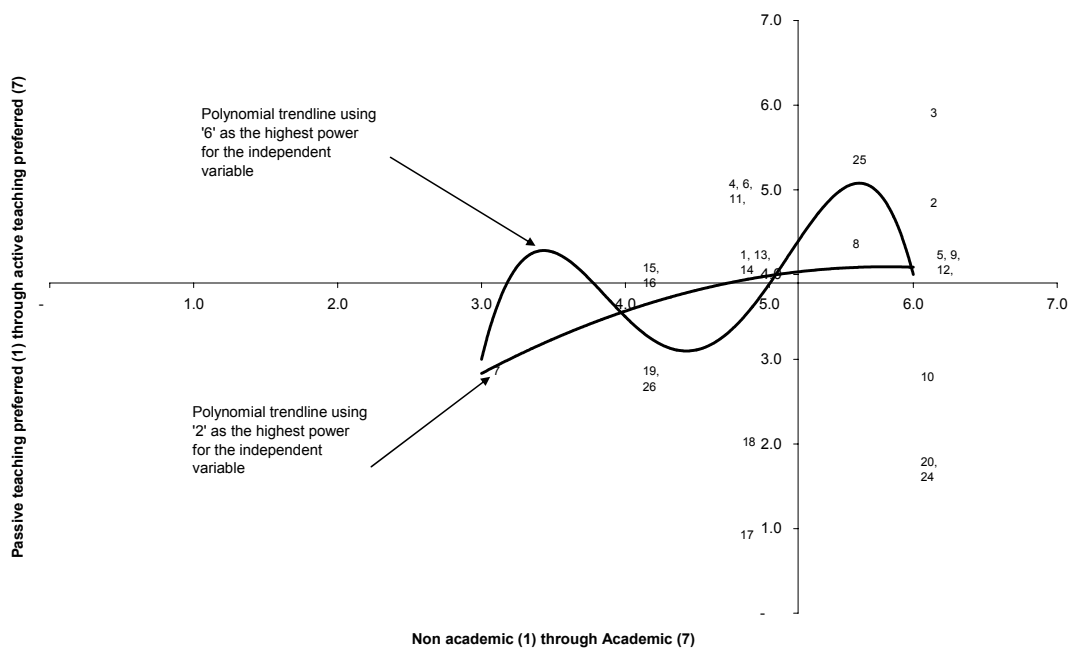
The students were asked to reflect on a teaching experience that they enjoyed. It became apparent very quickly that regardless of academic orientation the practical aspects of involvement in the work were very important.

> Student: My favourite subject was design and technology at school. That's because we were always 50% taught and then 50% do. You could sit in the classroom and learn about something and then next day you go and make it. So you can actually see what you're doing. To actually operate a process is a million times better than just looking at it on a page.

> Student: I agree with that… putting something into practice is always more enjoyable

> Student: Can I add to that - you never really know the main pitfalls until you do it. It's like a third dimension of learning…

The interviewer then asked how the students believed this notion related to this particular course. The question was designed to allow them to elaborate on whether they perceived the learning activities as being active or passive.

> Student: By producing a cash flow statement or a balance sheet then we're learning
>
> Interviewer: So you might consider the production of the financial statements potentially the product?
>
> Student: Absolutely. We've got the pro-forma and that's the process but if you don't implement the data into the process you don't know how to do it. By producing the financial statements that's what we're doing.

Contrary to the researchers' expectations, it would seem then that students perceive accounting as being active learning. This does not mean the same active learning styles are employed in accounting as in, for example, sports science, but active learning activities such as producing financial statements.

It might be that Biggs' (1999) original position is flawed and the definitions of student activity requirements too restrictive. It would seem that accounting students do not necessarily need to be involved in group work, nor problem based learning, provided their learning has a tangible and measurable outcome. Active learning does not refer to the kinaesthetic interpretation but means intellectual activity. Though the teaching approach adopted might be 'telling' rather than teaching necessarily, it is active because there is interactivity with the material.

Therefore, when we see more academic students not preferring active learning methods this does not impact on their level of engagement. The impact on their level of engagement comes when they can't apply their newly acquired knowledge.

Engagement seems to arise from an involvement in the production of a product, whatever that may be. Students seem to be most engaged when they can test their knowledge and the method of facilitating this depends upon the subject discipline rather than a pre-conceived view of the level of involvement.

General principle 2: Structure of teaching and learning activities is central to the facilitation of learning

The accounting students agree absolutely with the above statement. The structure of the teaching and learning activities is fundamental to the level of engagement and therefore to the achievement of the educational intention.

> Student: There are courses taught by endless Powerpoint slides… and you are expected to read them before the class… then they're read out to you again in the class… and then you're told to do questions in your own time. Well - you just don't do

> them… you never get a sense of understanding. You don't get the chance to build on and put it into practice. This is not good.

As many classes still run using a lecture-tutorial format it felt important to question their attitudes to Powerpoint in more detail. The interviewer asked whether the students felt Powerpoint was a poor teaching aid, whether they perceived benefits in its use or whether they had encountered ways of being engaged as students when tutors used Powerpoint.

> Student: …Some subjects just aren't practical and Powerpoint might be the only way to go. I am taking a subject where the lecturer has a set of Powerpoint slides but leaves gaps in them and you need to fill them out… if you don't encourage people to write something down then they'll never take it in… it's creating on-going learning

> Student: But this doesn't always work. There are pitfalls. I have been given a huge handout with gaps in but the notes don't tie up to the book. Even though I attended every lecture I didn't complete my booklet.

> Student: I agree. Powerpoint can be detrimental to teaching.

Structure is crucial to facilitate learning. In this instance the students agree that even the simplest teaching techniques, such as filling in blanks, creates frustration and ultimately fails to provide sufficient structure to fulfil the educational intention. It is possible to make students believe that there is a product - the completed lecture notes (as highlighted by the first student) - but if you can't achieve this aim (as highlighted by the second student) then the structure ultimately fails the student.

The interviewer asked the students whether they could be more specific and provide examples of where structure had helped or hindered their level of engagement. It happens that three students in the focus group had all participated in a newly introduced module which was based around problem solving. The course and its failings are outlined and described by the students as follows:

> Student: There's a course which is designed to be problem based learning… This is a really good idea on paper and could probably be done really well. The idea is that you have a large class and put them into groups of about 8. You are then given a problem and you come back in three weeks with the answer. But there are big problems with this. The lectures aren't tied to the solving of the problem, they are aimed at the exam in a few months time. You ask questions and the lecturers don't want to offer help so they say they can't. So you go to another group and they are stuck on a different problem. What you end up with is everyone with virtually the same wrong answer. You don't learn anything! In the end you get an email saying: this is the right answer.

> Student: Getting emailed the answer three months later doesn't help you.

> Student: It is an excuse for lecturers not to teach.

> Student: I agree.

> Student: This is everyone's worst subject. All I remember is struggling with the problem.

> Student: If problem based learning is done poorly then it's really not good.

> Student: I think it's a new idea and if it's done right then it is good. But not for everything.

> Student: It gets to a week before the hand in date and no one knows what to do so the lecturer gives a lecture on it which would have been useful when the problem was originally handed out.

It is difficult to dispute these comments. There is a feeling that problem based learning does not suit every scenario. Academic engagement and stimulation appears to come from being given a manageable problem, understanding the nature of that problem, and then being given the tools to grapple with it. Where an answer is unachievable there should be sufficient guidance provided to facilitate the completion of the problem.

General principle 3: Important to be able to share and re-use learning designs

Without prompting, one student drew particular attention to the reusability aspect.

> Student: We've got a 10 credit module which argues that you've got to know the basics of the first year from each discipline. Every student every year presents a paper on their own specialism. You write a 10 minute presentation. You then write a multiple choice exercise for everyone to complete based on your presentation. This is then put on line for everyone to see. These then form an annual set of papers for everyone each year to dip into. That way everyone is learning off everyone every year. That is continuous learning. It's building a knowledge bank. That's how e-learning should be…. Everyone learns from everyone else

This student displays excellent insight into the educational process. The student identifies the lecturer's intentions and clearly engaged in the learning process. He states that this is still embryonic and has only been running for four years but there is already a large database of papers to dip into.

As lecturers we feel it is important to be able to re-use material and have the ability to adapt material from prior years and other tutors. However, we believe that it is necessary to be flexible in this regard. If you walk into a classroom with material and it is poorly received you should have the ability to amend, replace or update material immediately or if immediate is not possible then at least for the next class in response to the specific needs of them. Re-using material should not mean that development stops. One student highlighted this problem:

> Student: [One] problem is that lecturers tend to change over often. And if the lecturer uses someone else's notes but they skew it towards their research the notes become uninterpretable.

> Student: …Or they skip bits out or just say cross through that bit, it's not in the syllabus any more.

Unthinking re-use of material is frustrating for students and will not lead to the students achieving higher level engagement. We believe it is good practice to re-use material but only if there is continuing development and refinement of

the material. Also, unthinking re-use will negatively impact on engagement with the material which will leave students unable to achieve the higher level skills such as relating, applying and theorising.

Marketing

We chose to investigate a second year undergraduate marketing course and two postgraduate level marketing classes. These courses ran for one semester during the academic year 2007/08. The response rate was 100% and 52 of 52 students responded. Figure 6 presents the non-academic students' polynomial trend, figure 7 summarises the academic students' polynomial trend and figure 8 shows a picture of academic and non-academic students combined.

General principle 1: 'Students learn better when they are engaged in a learning activity'

Table 1: Summary of data - mean responses (1 = not academic at all; 7 = very academic; 1 = very passive; 7 = very active)

	Accounting undergraduate	Marketing undergraduate	Postgraduate Diploma	Professional diploma
Academic orientation	4.54	4.41	5.00	5.03
Preferred teaching and learning approach	3.62	4.07	4.55	4.25

As with the accounting students, the more academic the non-academic marketing students were, the more they supported the idea of active learning (figure 6). However, as with the academic accounting students, the academic marketing students did not fit neatly into the model laid down by Biggs (1999). A picture of all students combined however shows a pattern that the more academic the student the more they favoured an active learning approach.

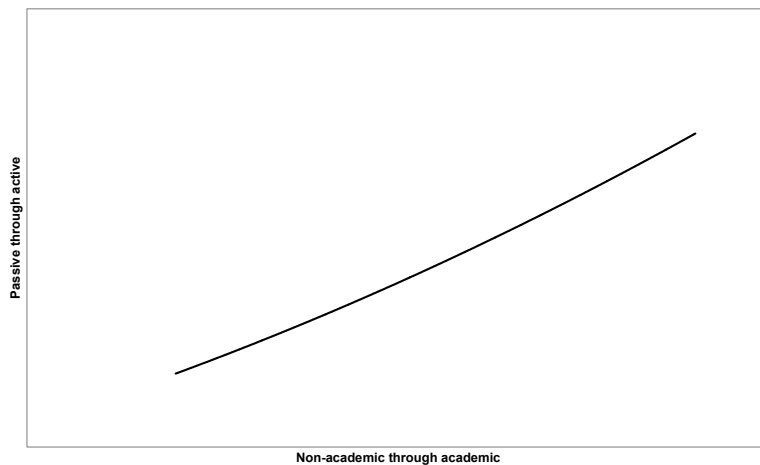**Figure 6 Non-academic preferred teaching and learning method**

Passive through active

Non-academic through academic

Figure 7 Academic preferred teaching and learning method

Passive through active

Non-academic through academic
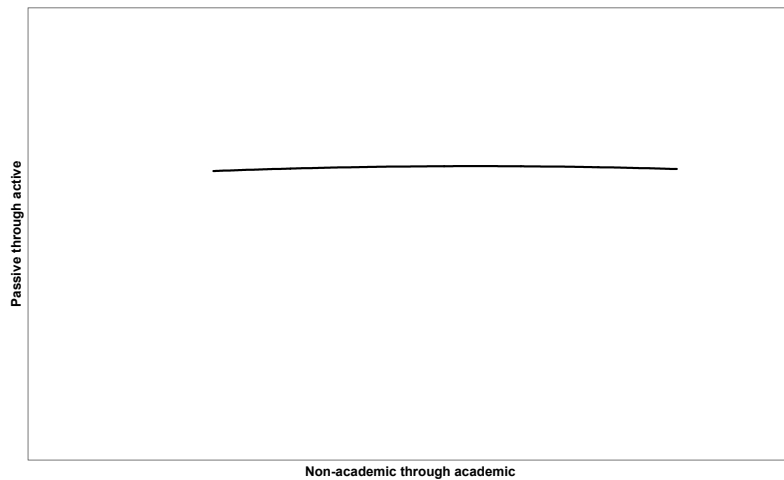
Figure 8 Academic and non-academic students combined preferred teaching and learning method

Passive (1) through active (7)

Non-academic (1) through academic (7)
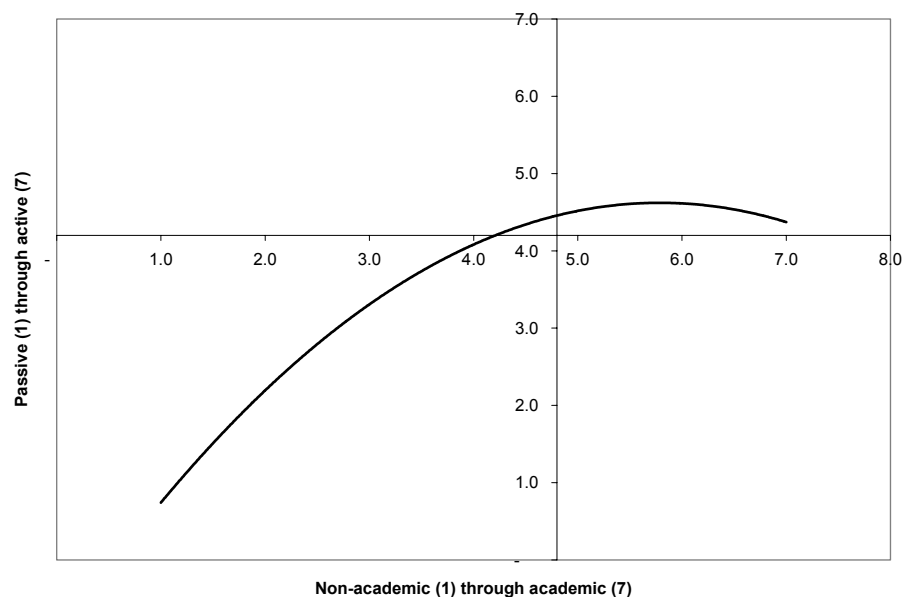
The undergraduate students tended to feel themselves the less academic (see table 1) in both accounting and marketing. This is perhaps unsurprising given the difference in the stage of their studies. The less academic the stronger the relationship to a preferred passive learning approach. However, the postgraduate students are professional students (Chartered Institute of Marketing) and therefore we might have expected them to be of a less academic and more professional bias.

Overwhelming feedback in the focus groups was that the students appreciated the tailored case studies and application of theory so that they

were able to '*take what they have learned in the classroom back to their organisations*' (student).

This of course, adheres to the Leitch agenda (2006) but is essential in any business training and education. A sample of comments reflecting the engagement with and involvement in the course and the reasons for that are as follows:

> Student: I like the fact that you give us all sorts of scenarios with all different contexts to allow us to apply and see things from different perspectives.

> Student: Everything you give us as application is current and cutting edge. It has really made me look at everything around me very differently, from a more marketing perspective.

> Student: I now know what businesses are doing to me! The currency of the applicability really helps me learn and understand.

> Student: You always seem so interested in us… You knew our names by week two and show how different areas of the topic impact on different people's businesses within the class. That then helps our understanding when doing more case study analysis.

> Student: It really helps that you have done the job in the real world as you apply everything to real-life situations… That helps my understanding of the issues and potential ways of resolving problems when we look at case studies etc

From these statements it is clear that there is generally a high level of engagement. Perhaps, the professional students are more likely to be more highly motivated but the students studying on the undergraduate marketing pathway (as the undergraduate class is a mixed pathway melee including lawyers and information systems students), also showed higher engagement which has actually been reflected in the summative assessment results. The positive and dynamic learning environment seems to encourage them to work harder in terms of more independent research as exemplified by wider reading and fully utilising the articles and hyperlinks posted on the Virtual Learning Environment (VLE). Regularly, students from all classes will bring in news articles or related issues that have been studied in the classroom.

General principle 2: Structure of teaching and learning activities is central to the facilitation of learning

The marketing findings echo the accounting findings in concluding that the structure is important to teaching and learning. Again, there was strong evidence from the student interviews about '*knowing where they were and having a concrete structure in place'* (student) both intra and inter-module on the professional courses. This does not prevent currency and interesting cutting edge issues from being introduced as, in a ubiquitous subject area like marketing, the students are particularly pleased that I constantly update my notes and teaching to reflect what is happening in the real world.

> Student: Your handbook gives us all we need to know about what we will be doing and there is a definite progression throughout the course.

> Student: I know that all the information is on the VLE but I like having the handbook with the Module Implementation Plan (MIP) and the structured sessions so I know what is going on.

As already stated above the students seem to like the fact the teaching is fluid and adapts and changes to students' needs. This is achieved by tailoring delivery, pace and content. Of course, all of the student feedback for principles 1 and 2 so far agrees with the surface versus deep learning agenda in that we encourage deep learning by:

- Focussing on central concepts
- Making connections between different modules
- Relating new and previous knowledge
- Linking course content to real life
- Students' positive experience of course leading to confidence in ability to understand and succeed.
- Tutors showing personal interest and experience in the subject
- Well structured
- Using formative assessments that require thought and ideas to be used together
- Relating new material to what students already know and understand

It is essential to have an awareness of these key areas in the learning and e-learning design to be able to consistently deliver successful outcomes.

General principle 3: Important to be able to share and re-use learning designs

It is difficult for material to be reusable. We work on case studies and Problem Based Learning (Savin-Baden, 2004) and therefore a case is only as good as the context in which it is written. Business models change, trends in marketing change and what the students appear to value is the real world element and this facilitates learning. If the cases were outdated they wouldn't engage and therefore wouldn't achieve. Tangible evidence of their achievements is that as a centre we achieve an average of 20% better than the national and international pass rates which are all externally assessed.

> Student: I hate it when tutors use Harvard Business School cases from 1970's – you are teaching us that marketing doesn't play to those rules anymore.
> Student: Case studies and their immediate applicability are what has helped my learning – they are current and I know that I can use the same themes and ideas to resolve issues in my business.

Suggestions and conclusions

The accounting students were asked whether they felt e-learning could fully replace the current learning design.   The accounting students stated the following:

> Student: If the course were to be the same as present then no, never
> Student: No
> Student: …partly because people don't use e-learning
> Student: Not even that… the issue is one of interaction. You'll never replace the format because if you're looking at people and they look perplexed, then you will spend longer on something. If you're e-learning then the computer doesn't have a camera that says… oh, he looks upset, I'll spend longer on that.

The marketing students stated the following:

> Student: I need the interaction in class. I like to know that I can ask questions if I am not completely sure.
> Student: Yes I would never learn as much online.
> Student: I'm not sure I would be that motivated.
> Student: Well I think that I would read a bit but you make it come to life – I like your examples and the way we apply what is happening to different businesses.

We believe the issue is linked to Biggs' (1999) analysis of student orientation and preferred learning approach. The problem faced in higher education is that we are striving to encourage learners to engage with difficult questions such as 'analyse' and 'evaluate' rather than 'describe' or 'outline'.   Biggs reflected on this as being high level engagement with the highest levels being relating, applying and theorising. We do not dispute that academic students stand a higher chance of attaining the higher levels but to facilitate this they need individual direction.

We believe it is essential to bear in mind that every student is different and every student has a preferred learning method and preferred learning design. Whilst a lecturer or tutor is stood at the whiteboard then it is possible to give this personally tailored element because of the adaptability and flexibility of human interaction. However, if we focus too heavily on re-usability to the detriment of flexibility then the system will fail.

We agree therefore with Britain's first two underlying principles of learning design but are concerned by the third. We agree that engagement in learning activity should facilitate learning whatever that activity is. We dispute Biggs' (1999) position where he stated that there are teaching methods that facilitate higher level attainment and instead would say that it is irrelevant whether you adopt a problem based learning approach or whether you adopt a telling approach provided there is method and structure to what you are asking. If you adopt problem based learning inappropriately or without proper research then it will fail. If you adopt a passive approach such as purely didactic it can be equally successful. However, by placing emphasis on re-usability we are detracting from the educators' importance.   Current UK government research (Barber and McKinsey 2007) appears to reinforce this.

Future work could examine whether e-learning addresses only knowledge transfer i.e. the lower levels of academic learning - memorising, note-taking, describing and explaining (Biggs1999) - and can be used in terms of developing pod casts for essential knowledge transfer but complementing the online content with interaction in workshops/tutorials as have been shown to be valued by our student cohorts, both accounting and marketing. Another related area for future scrutiny could be to establish whether a VLE actually caps the level of engagement again as discussed by our students in this research.

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