

Addressing a 'Preconceptual Threshold': A transformation in student preconceptions of introductory accounting

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ABSTRACT

The study of introductory accounting can be challenging for students for many reasons, one of which is the formation of negative preconceptions about the discipline. These preconceptions are often reinforced by a university environment in which introductory accounting programmes are positioned as mandatory components of many business degrees and taught to large cohorts of students using traditional methods of curriculum design, instruction and assessment (Zeff, 1989; Mladenovic, 2000; Lucas, 2002). Students' negative preconceptions are further entrenched through commonly found stereotypes in the popular media (Cory, 1992; Unerman & O'Dwyer, 2004), with the accounting profession currently experiencing "a widely perceived ethical breakdown of a trusted fiduciary institution that has been at the epicenter of a number of financial scandals" (Strier, 2006: 67). Drawing on threshold concept theory (Meyer & Land, 2006a, 2006b), this paper argues that students' preconceptions of the accounting discipline form a major preconceptual threshold in their learning. Through an analysis of phenomenographic data collected from six student cohorts over a three-year period, the project examines students' experiences in a first year accounting course to identify the types of negative preconceptions that exist in an introductory accounting course; followed by a review of students' reflective work using the threshold concepts' paradigm to analyse individual student learning journal entries and summative reflective essays; and a consideration of the role of accounting educators in redesigning aspects of the accounting curriculum to address key thresholds, such as student preconceptions, in order to better assist learners to deal with these barriers and ultimately to enable them to achieve a heightened epistemological understanding of the discipline.

Introduction

The study of introductory accounting, encompassing both business language and technical accounting knowledge acquisition, has traditionally proved challenging for students (Weil, 1989; Lucas & Mladenovic, 2006). There is a growing body of knowledge about negative student preconceptions of accounting and the effect this has on introductory accounting courses (Gow, Kember & Cooper, 1994; Sharma, 1997; Lucas, 2000, 2001; Mladenovic, 2000; Lucas & Meyer, 2003, 2005). Lucas (2000, 2001) and Lucas & Meyer (2005) report that students' negative preconceptions of accounting include perceptions that accounting is boring and dull, a technical subject consisting solely of numbers and mathematical formulae and mainly objective, with no need for judgement.

Consequently, many learners fail to fully comprehend the role that accounting plays in society and its varying degrees of subjectivity.

Drawing on threshold concept theory (Meyer & Land, 2006a, 2006b), this paper argues that students' preconceptions of the accounting discipline form a major preconceptual threshold in their learning. Meyer and Land (2006a: 3) describe this threshold as "represent[ing] a transformed way of understanding, or interpreting, or viewing something without which the learner cannot progress. As a consequence of comprehending a threshold concept, there may be a transformed internal view of subject matter, subject landscape or even world view". This preconceptual threshold needs to be identified, entered, explored and overcome with the guidance of educators, to enable the learner to develop informed perceptions and impressions of accounting and to acquire a level of understanding beyond the superficial.

By examining students' experiences in a first year accounting course, this paper aims to outline the types of negative student preconceptions about accounting that exist in an introductory accounting course, ACCT 103: *Financial Information for Business*. This is achieved through an analysis of phenomenographic data collected from six student cohorts over a three-year period. This initial analysis is followed by an in-depth review of students' reflective work by analysing both individual student learning journal entries and summative reflective essays using the threshold concepts' paradigm. These findings are corroborated by further document analysis utilising students' course and lecturer university evaluations and qualitative comments, taken from administered questionnaires. The findings illustrate that students perceive these identified preconceptions to be troublesome, highlighting the need for a concerted effort to develop positive attitudes in first year accounting students.

The paper reviews relevant literature on students' perceptions of learning accounting, students' perceptions of accounting and the threshold concept framework. This is followed by a description and discussion of the background to the research and the research methodology employed in the project. The findings of the study are then discussed and analysed, with the conclusion and limitations presented in the final section.

Literature review

There is an extensive body of education literature, which focuses on students' conceptions of and approaches to the learning process (Ausubel et al., 1978; Feuerstein, Rand, Hoffman & Miller, 1980; Marton & Booth, 1997; Entwistle, 1998; Biggs, 2003; Ramsden, 2003). Within an accounting context, this wide range of research includes topics such as students' perceptions of learning accounting (Gow, Kember & Cooper, 1994; Sharma, 1997; Lucas, 2001; Lucas & Meyer, 2003; McGuigan & Kern, 2009), students' learning approaches (Ramsden & Entwistle, 1981; Trigwell & Prosser, 1991; Lucas & Meyer, 2005) and students' learning difficulties (Weil, 1989). These studies have contributed in various ways to providing an insight into the learning process in accounting from a student's perspective (Marton, 2000).

Students' perceptions of learning in accounting

Sharma (1997) reviewed accounting students' approaches to learning by asking them, "What do you mean by learning?" His results proved illuminating in that accounting students perceived learning to be the act of acquiring, as opposed to understanding knowledge. Learners were more willing to accept knowledge via transmission through the perceived knowledgeable educator than they were to engage directly with the learning material, in order to create understanding and to construct knowledge. Sharma (1997) further ascertained that students did not become personally involved in their learning, either physically or emotionally; rather they externalised the learning process so that it remained peripheral. Lucas' (2000) phenomenological study into students way of learning

introductory accounting supports Sharma's (1997) study by classifying how students see the world of accounting into either, with *detachment*, or with *engagement*.

Students' perceptions of accounting

Students' negative preconceptions of accounting can prove problematical for accounting educators. This is particularly true for the teaching of introductory accounting courses, which are usually taught in the first year of a business degree to large student cohorts often with multiple areas of interest and follow an often rigid curriculum dominated heavily by prescribed texts (Zeff, 1989; Mladenovic 2000; Lucas & Mladenovic, 2006). Lucas (2001) and Lucas and Meyer (2005) find that students' negative preconceptions of accounting relate to learning the technique, rather than the organising framework of accounting. The negative preconceptions include perceptions that accounting is boring and dull, a technical subject, consisting solely of numbers and mathematical formulae and mainly objective, with no need for judgement (Lucas, 2000, 2001). This can lead students to adopt a learning approach that may result in a superficial and limited understanding of the content within accounting courses (Beattie, Collins & McInnes, 1997; Lucas & Mladenovic, 2006; Meyer & Land, 2005). As a consequence learners may fail to comprehend the relevance that accounting has to their overall business degree and also within their everyday lives, failing to see the transformative link that exists between commonly used financial concepts, such as asset valuation, time value of money and investment risk in business, and their application to everyday personal finance (McGuigan & MacDonald, 2008; McGuigan & Kern, 2009).

A lens through which to clearly view the accounting curriculum

An emerging theoretical framework developed by Meyer and Land (2003, 2006a) provides a new perspective on students' levels of conceptual understanding through the introduction of "threshold concepts", which are based on the premise that certain concepts in a discipline often present students with barriers to learning. Such threshold concepts are described by Perkins (2006: 43) as "pivotal but challenging concepts in disciplinary understanding. They act like gateways. Once through the gate, learners come to a new level of understanding central to the discipline". This distinguishes threshold concepts from core concepts found within a course, as threshold concepts represent more than simply a building block towards student understanding; rather, they are "akin to a portal, opening up a new and previously inaccessible way of thinking about something. It represents a transformed way of understanding, or interpreting, or viewing something without which the learner cannot progress" (Meyer & Land, 2006a: 3). A threshold concept, once mastered by a learner, results in a "qualitatively different view of the subject matter and/or learning experience and of oneself as a learner" (Kiley & Wisker, 2009: 432).

Meyer and Land (2006a) propose five main criteria for a concept to qualify as a threshold concept, namely, that the concept should be transformative, irreversible, integrative, bounded and troublesome. They suggest that a threshold concept is transformative in nature representing a significant shift in the perception of a subject and a possible shift in learner identity. Secondly, it is probably irreversible, meaning that students who encounter and successfully pass through a threshold concept possess a worldview different from that held previously, which cannot be unlearned. Thirdly, a threshold concept is integrative, displaying a previously hidden interrelatedness of something to a student. Fourthly, it may represent a boundary in a student's learning between the academic discipline in which the student operates and that of another. Finally, it is proposed that threshold concepts may be troublesome to the student, that is, counter-intuitive, alien or incoherent (Perkins, 2006).

The transformative nature of threshold concepts means that learners may develop an enhanced interpretative understanding of subject matter, a subject landscape or even a worldview (Cousins, 2006). Without this transformed means of understanding and viewing something, the

learner may be unable to successfully¹ advance through higher- level education. This theoretical framework is strongly aligned with a student-centered approach to research, in which the nature of a student's understanding and approach to learning is emphasised, as it provides a theoretical lens through which to obtain a deeper understanding of the learning processes of introductory accounting students and their associated preconceptions.

Students' preconceptions of introductory accounting are often ideas or prejudices formed without any real experience or reliable information. These preconceived ideas are reinforced through textbooks written primarily in order to address technical accounting standards and traditional bookkeeping. However, upon commencement of their academic programme student perceptions become more informed. As they develop a way of regarding, understanding or interpreting something, a clearer mental impression consequently starts to form. Drawing on threshold concept theory (Meyer & Land, 2006a, 2006b), this paper argues that students' preconceptions of the accounting discipline form a major "preconceptual threshold" in their learning. This threshold needs to be identified, entered, explored and overcome with the guidance of educators, to enable the learner to develop more informed perceptions and impressions of the accounting discipline.

Research methodology

Background to the study

ACCT 103: *Financial Information for Business*, is taught in the first year of a three- year business degree at Lincoln University, New Zealand. The course is mandatory for all accounting major students who wish to satisfy the requirements of the New Zealand Institute of Chartered Accountants (NZICA)² and is also a core paper within the commerce degree programme. The aims of the course, which focuses primarily on a decision-user appreciation of financial statements, are to provide an understanding of the basic concepts underpinning the preparation and analysis of financial statements and to apply these concepts to the interpretation and management of accounting data.

As ACCT 103 is mandatory in the commerce degree, the course is run three times per annum; once in semesters one and two and also in January summer school. Approximately 500 students enrol in the course each year, with a roughly equal gender split and an increasing number of international learners. The student population consists predominantly of first year students, who have not been exposed previously to accounting in a formal learning environment. The students can be classified into three main groups: accounting major students, agricultural and life science students, and students enrolled for other major areas of business study.

Implementation of Reflective Journals in Introductory Accounting

The use of reflective journals in accounting education has had some previous exposure in the literature (see for example, Day, Kaidonis & Perrin, 2003; Samkin & Francis, 2008; McGuigan & Kern, 2009; Cord, Bowrey & Clements, 2010). Building on prior reflective learning activities described in the literature a reflective journal activity was developed and implemented in 2008, in order to enhance student engagement in the course. The activity consisted of two parts with a weekly reflective journal and a single, written assignment. The activity commenced in the first week of lectures, when students were required to compose two learning goals that they would like to achieve for the ACCT 103 course. Students were asked to document these in a learning journal that was to be maintained for the duration of the 12-week semester. The learning goals were to be of a personal nature, each being unique to the individual student, in order to encourage ownership of the learning by the student. To give the students some guidance with the setting of their goals, there was provision of several written examples of possible learning goals.

The first part of the reflective activity required students to compose a journal contribution at the end of each week, containing a personal reflection of their experience in their educational setting and a discussion of how this might relate to their external environment, for example, their family, personal finances and business practice. Students were provided with reflective practice guidance documentation on the course website to assist them with the construction of their learning journal entries. This documentation illustrated and described a theoretical framework within which to undertake reflection, namely, describing the experience, analysing it, creating an enhanced meaning and planning action for future learning (Moon, 1999; Kennison & Misselwitz, 2002).

The second component of the reflective activity required students to complete an essay addressing their set learning goals, discussing their reflective journal and summarising their overall progress within the course. The essay design provided students with an opportunity for a secondary reflective analysis, allowing deeper reflection of their learning for the duration of the course.

Research objectives

The research has two primary objectives: firstly, to identify student preconceptions of introductory accounting within ACCT 103 and, secondly, to assess whether these preconceptions of accounting constitute a threshold concept as defined by Meyer and Land (2005, 2006a, 2006b). In order to achieve this, a phenomenographic research approach, which allows the world to be visualised from the student's perspective (Entwistle, 1997; Marton, 1981, 1994) is adopted. The following discussion describes in more detail the data collection and data analysis methods utilised in the study. The research design for this study has incorporated numerous measures, such as providing a high level of freedom for the research participants to describe their experiences and carefully encoding students' reflective work, in order to identify accurately the emotions and emphases of the participant (Ashworth & Lucas, 1998).

Data collection

Data, collected during a three-year period from 2008 to 2010, from six different student cohorts, are from three sources: firstly, from a class exercise held during the initial lecture in which students were given an opportunity to document their preconceptions of accounting. Students were asked two open-ended questions relating to their perceptions of accounting and their motivation for enrolling in ACCT 103. The exercise was implemented at the beginning of the first lecture in the course, in order to obtain the viewpoint of students prior to any course-related exposure.

Secondly, there was an examination of students' reflective essays and journals. The essays were re-read and analysed on a word-by-word basis to identify student preconceptions and to outline comments that were related to the threshold criteria propounded by Meyer and Land (2005; 2006a, 2006b). These comments were then highlighted and coded accordingly. Thirdly, there was a collation and analysis of university-administered course and lecturer evaluations in order to provide a source of corroborating evidence for data collected.

Data analysis

There was an undertaking of two stages of analysis to achieve objectives of the study. The first stage involved the identification of student preconceptions of introductory accounting within the ACCT 103 course, achieved by an analysis of the data collected at the commencement of lectures for each student cohort from 2008 to 2010.

After being classified and summarised, the collected data were then analysed in terms of the five characteristics of threshold concepts enumerated by Meyer and Land (2003), namely, that they are transformative, irreversible, integrative, bounded and troublesome.

Results and discussion

Presenting and discussing the results of the study this section identifies existing student preconceptions of introductory accounting. An analysis by drawing on threshold concept theory follows in order to examine how students' preconceptions of the accounting discipline form a major preconceptual threshold in their learning.

Students existing preconceptions of introductory accounting

Students' negative preconceptions³ of the accounting discipline can prove problematic for accounting educators. In order to provide a greater understanding and documentation of students' preconceptions a written activity for students was introduced into ACCT 103 to be completed upon commencement of the initial lecture. Students were provided with a single page and asked to answer two open-ended questions, namely, "what do you hope to learn from taking the course?" and "what is your perception of accounting?" The activity was completed at the beginning of the initial lecture in order to allow students the opportunity to document their thoughts prior to their exposure to course material or to any other influencing factors. Each student cohort from 2008 to 2010 undertook the written activity.

The research team read, analysed and coded the students' written answers to create six categories of preconceptions of accounting commonly held in ACCT 103. The preconceptions identified were: enjoyment, technical language, numerical and objective discipline, boring, fear, difficulty. Table 1 lists and describes each of these categories of preconceptions and provides a selection of the most representative student statements.

| Students' Preconceptions | Preconception Description | Illustrative Student Quotes |
|---------------------------------|--|--|
| Enjoyment | An inherent interest in and/or motivation for accounting. | 'I enjoy it, it is interesting' 'Interesting subject' 'It [sic] not that fun but I have to do it for my degree.' |
| Technical Language | New language that has an emphasis on technical jargon. | 'Lots of info & new concepts! Hard for those who haven't ever studied accounting before!!!' 'Quite hard with a lot of complicated language' 'Heaps of new concepts' |
| Boring | Accounting is dull and uninteresting with very little to offer in the way of excitement or interest. | 'That it is a difficult subject to make interesting' 'It is quite boring and factual' 'Dry subject matter. Simple ideas made complicated by use of jargon' 'Challenging and boring' 'Contains useful information, however tends to be less interesting than other subjects' |

| | | |
|------------------------------------|--|--|
| Fear | An inherent sense of fear towards accounting, resulting in a lack of confidence or interest. | 'Sound [sic] like this subject is a little bit hard, I'm afraid of it.' 'a lot of work to do by yourself and scary— Heaps of new concepts' 'A bit scary right now!!' |
| Difficulty | Accounting is difficult and challenging. | 'Appears that it is going to be difficult. Heard that it is not easy from student [sic] who have done accounting before. However, this is going to be a valuable course' 'Seems from talking to past and present students, that ACCT 103 is the hardest to pass for a 100 level paper' 'That [accounting] is bloody hard and very stressful' 'I used to study ACCT 103 3 times and failed. Really shame on it. I felt it is not that hard when I studied during the semester - even the exam is not bad. But could not pass at all' 'It's quite hard and confusing.' 'I don't know a lot about ACCT apart from that it's hard!' 'Pretty hard due to not having done any accounting in the past.' |
| Numerical and Objective Discipline | Accounting involves financial calculations. It is factual and objective with the financial statements being the final product. | 'Calculations, define [a] business position' 'The equations are hard!!!' 'That it is a subject or a discipline dealing with the financial figures of a business' 'Full with theories and calculations' 'Number crunching and coming up with solutions for financial information' 'To be able to work out a balance sheet from scratch. To be able to identify odd amounts in a set of accounts or identify problems when the accounts is [sic] not balanced (auditing)' 'My difficulties with maths and lack of background experience with maths and accounting make it more difficult for me' |

Table 1. Student preconceptions commonly held in introductory accounting

The students' written comments support the findings of prior research in accounting (Lucas, 2000, 2001; Lucas & Meyer, 2005; Mladenovic, 2000; Weil, 1989), which found that students possessed negative preconceptions of accounting. At this early stage in the course, there is a perception that accounting is difficult, with an inherent inability to arouse students' interest, and requiring a high level of technical mastery. These preconceived ideas or prejudices are often ill-informed, with lack of exposure to practical experience or to reliable information. Rather, they are borne from public and social media sources, parental influences and commonly held stereotypes, often giving rise to misconceptions.

Upon commencement of their academic programme and exposure to learning materials, student preconceptions become more informed as they develop a way of regarding, understanding or interpreting something, and a clearer mental impression starts to form. Often, during this process in introductory accounting, students' commonly held misconceptions combine with newly presented knowledge to create a barrier to learning that is often difficult for accounting educators to penetrate. Furthermore, many accounting programmes reinforce such misconceptions through the use of prescribed textbooks written primarily to address technical accounting standards and traditional bookkeeping, portraying a strong "entity" approach to the discipline (Zeff, 1989; Lucas, 2002). Such approaches fail to address the role that accounting plays in society, the level of professional judgement required as an accountant and accounting's inherent subjectivity.

There has been a great deal of emphasis within the higher education literature and within university management practice in recent times on the first year higher education experience and how educators can assist with student development (see for example, Bruinsma & Jansen, 2009; Lupton, 2008). Students' preconceptions acting as a barrier to their learning may be worth further exploration in accounting education in order to better understand the learning process of these students and thus assist them in overcoming such a barrier. In order to achieve a heightened level of insight into the students' experience within introductory accounting, the project employed Meyer and Land's (2005, 2006a, 2006b) threshold concept framework, as it is aligned clearly with a highly student-centred approach to research, in which there is an emphasis on the nature of the student's understanding and approach to learning. The next section analyses student-identified preconceptions in ACCT 103, utilising Meyer and Land's threshold concept (2005, 2006a, 2006b) paradigm to inform the question "could students' negative preconceptions constitute a 'perceptual' threshold barrier in the study of introductory accounting?"

'Perceptual Threshold Barrier' in Introductory Accounting?

The project team analysed students' reflective essays and journals in two parts: firstly in accordance with the preceding student-identified preconceptions of accounting and, secondly, in accordance with the threshold concept framework. The characteristics of threshold concepts as propounded by Meyer and Land (2005; 2006a, 2006b) are discussed in turn, using a selection of the most representative statements from ACCT 103 students.

Transformative

One characteristic of a threshold concept is its transformative ability to open up a new or previously undiscovered way of viewing a discipline. The transformative nature of threshold concepts means that learners often develop an enhanced interpretative understanding of subject matter, subject landscape or even worldview (Cousins, 2006). A student-derived preconception of accounting is its objectivity, that it is numerically and factually based, with prepared financial statements constituting the final output in the accounting process. On the other hand, students do not perceive accounting to be opinion-based, subject to professional judgement and open to interpretation and subjectivity. A transformative shift in students' learning towards the latter perception of accounting can be illustrated through the following statements from students:

- Accountants' actions [a]ffect the community through the values they use and [the] importance they place on items in the financial statements, it's not just calculations that are required. The use of judgement in financial statements has more importance.
- I think my view of accounting and finance has changed during this course. Before it was just all numbers, but now I think I can successfully say that I understand a lot more of what managers need to understand and run a successful business, along with budgeting for that enterprise.

- In conclusion, at [the] beginning I think accounting and finance are [sic] just a course like mathematic [sic] or statistics but after these three months' study I realise that in depth [sic]. Accounting and finance are not only just paper work but also relate to [sic] closely how to run a business successfully.
- I think that accounting on the whole is very important to the running of the economy and I am now aware of exactly what this entails. Also the fact to see how the bottom line of companies can be tampered with and the auditing involved.

Students' shift in perception from accounting being objective and factually accurate to being subjective and opinion-based is transformative, as a student would not be likely to view the subject matter of accounting in the same manner again. It opens up a new and previously undiscovered way of looking at the subject, where accounting requires professional judgement and interpretation.

A second commonly held preconception of accounting is that it is boring and mundane, with very little relevance to the learner. This results in frustration on the part of the learner, causing a lack of engagement, as it can often be difficult to see any immediate relevance of the discipline to one's own life. This transformative aspect of learning introductory accounting can be illustrated through the following student statements:

- I have realised there is a lot more to accounting than what meets the eye. I originally thought accounting was all numbers and equations, I have now realised that there is a lot more to it.
- At the beginning of the semester, I came into ACCT 103 with a huge preconception that the course would be very dry and math-focused. I did not imagine that in the end I would actually enjoy learning about accounting.
- My perceptions of this course have definitely changed because I did think accounting would be very boring and I would just do as much as I had to, to pass and no more, but I did do extra reading sometimes when I was in the right state of mind, because I found that part interesting.
- What I once perceived to be a mundane and minor subject is actually really interesting and sometimes exciting. And although it may not be something I can use in my area of work in the future in the food industry, I have gained something that is valuable and that helps me understand a bit more about how things work in organisations and businesses.
- From what I have learnt in this subject I will be able to apply it when I go home and take over the farm. Budgeting will be a very important factor, as will calculating my performance. The knowledge I have of accounting while not extensive will greatly help me in the future.
- I did a one-week budgeting [sic] and actually collect [sic] the receipts for recording for workshop four. By actually doing it, I realised the usefulness of it.

It is evident that once students can see the relevance accounting has to their own lives, within a business or within society, their perception of accounting changes as they become more engaged and take more of an interest in what is occurring within the course. Both of the preceding examples illustrate a transformation as they "... occasion a significant shift in the perception of a subject" (Meyer & Land, 2006a: 7).

Irreversible

A second characteristic of a threshold concept is its irreversibility, meaning that a change of perspective occurs that is "unlikely to be forgotten, or will be unlearned only by considerable effort" (Meyer & Land, 2006a: 7). The irreversibility of students' changed preconceptions can be illustrated by reviewing the aforementioned student preconception of accounting as objective, involving

many calculations with a single solution. If students are exposed to the view that the practice of accounting is only as good as the valuations and subjective judgements made, or if they begin to glimpse the political influence on accounting, a shift in view may take place, which is irreversible in that students would not view the practice of accounting in the same way again. It would no longer be possible to view accounting as solely objective, with a right or wrong solution to every problem. This is similarly true for a student's preconception of accounting as being boring and mundane. Once students have seen the relevance accounting has to themselves, businesses or society, this could motivate a deeper interest in the discipline, resulting in enhanced learning benefits, as the following statements show:

- The fact that I am now interested in these things tells me I have gained from being more attentive in class and trying to actually help myself by owning this knowledge, rather than just semi-learning it.
- Why don't you show the Enron film in the first lecture – this was brilliant and allowed me to see the impact of accounting on the Californian State, you know with the electricity outages and stuff.

This irreversibility transforms a learner's identity of himself or herself as the student will never view the world in the same way again. This is especially true if students can be assisted to capture this moment in their learning for themselves, through the use of reflective journals. Students' initial fear in learning accounting also highlighted the irreversibility of students' preconceptions. Once overcome, this learning barrier was unlikely forgotten in that students had acquired new confidence in respect of their view of accounting:

- One of the result [sic] that I believe for participating in the course is the increase of my confidence in placing myself into the business world more aggressively.
- The workshop program helped build confidence in me. I was reluctant to participate in the group workshop program before due to my lack of confidence in accounting and engaging with people, but now I am more than willing to do so.

Integrative

A threshold concept is integrative in nature in "that it exposes the previously hidden interrelatedness of something" (Meyer & Land, 2006a: 7). Students often do not place relevance on accounting, perceiving it to be the calculation of financial statements and the accurate completion of journal entries, or what is commonly referred to as bookkeeping. This course exposed students to a broader perspective of accounting, in which it has a societal role to ensure businesses' public accountability. This previously *hidden interrelatedness* is indicated by students:

- The American financial crisis has somehow opened my eyes wider about the importance of understanding the business structure and how to analyse [the] position of an organisation based on its liquidity. Personally, it is very crucial to me, as I would need this information before signing a job contract with [a] respective organisation upon my graduation.
- My favourite part of the course was the video documentary on Enron. I really enjoyed this a lot more than I thought I would. It grasped [sic] my attention and kept me watching the whole time. I wish this video was shown at the beginning of the course, because it dramatically increased my enthusiasm for the class. Seeing how Enron worked and failed was a great insight to how important accounting and finance is in businesses. It brought together everything I had learnt over the semester about the importance of reliable financial reports, auditors' reports, laws and regulations and that shareholders and the public can be manipulated if the correct procedures are not followed.

The video enabled learners to better understand the role that accounting plays in society. In other words, students began to see accounting's integration into society. Accounting exists in a real world, with a social context that is influenced heavily by political influences, making complete objectivity and neutrality of accounting practices impossible; accounting does not simply exist within textbooks and businesses.

It is evident that students also became aware of the integrative nature of accounting, including its interrelatedness with other disciplines and/or topics and its integrative *organising structure or framework*, which provides the explanatory rationale for accounting techniques:

- However, the positive thing about studying accounting is that once people understand the concepts and the relationships between each statement and know how they work, things will become easier. Understanding is the key issue of learning accounting. [In] Learning accounting [one] does not need to memorize a lot of information or styles.
- During the learning process, I found there is a strong relationship between accounting and finance, and I began to understand that there is no independent course; each subject may have some direct or indirect relationships with some other subjects. If I want to study finance well, some basic accounting knowledge should also be relevant to me in order to learn well.
- In some regards I wish I had have taken it in my first year as it would have been helpful to understand many of the aspects of the subject that needed to be applied in many of my Farm Management assignments.

Finally, students who have previously seen no relevance in accounting have learnt that accounting relates to a broader business context, as well as to their own personal lives, in respect of student loans, budgets when renting and credit card repayments:

- This course has stimulated my interest in what I previously thought to be a bit of a bland subject. I'm now looking forward to implementing some of my new budgeting skills I learnt to improve my student diet of noodles to something a bit more like ... real food!
- I found the valuation techniques to be most useful as I saw how accounting can help me to pay off my credit card debt faster.

Troublesome

A learner's progression through a threshold and its resulting transformative process is often unclear to educators; it can occur quite suddenly, or can take a considerable period of time. It can be seen that this kind of transformation in preconceptions can often be challenging or *troublesome* to some students. For some, this can involve a heightened level of confusion when students' misconceptions combine with newly presented knowledge, leaving the students in a *liminal* state (Meyer & Land, 2005; 2006b).

- But I used to think that accounting is numbers-based and there is a correct answer for every problem – now I think that the balance sheet is not correct just because it balances; it is open to interpretation and professional judgement, but I don't get the purpose of providing it then?
- I didn't enjoy the areas of balance sheets or income and cash flow statements. I was not all that interested in these and I found them quite hard to understand, as they were so similar but yet so different, which left me confused a lot of the time. This tells me that I lose interest when trying to learn more tedious subjects like I found this.

Meyer and Land (2005; 2006b) describe this in-between stage of development and learning as a state of *liminality*, meaning within the threshold (Lucas & Mladenovic, 2006). Meyer and Land (2006b) postulate that this liminal state represents a certain amount of oscillation and confusion for

learners, resulting in students copying behaviour and languages that they perceive are required of them prior to obtaining a full understanding. It is in this state of liminality that introductory accounting students may “feel ‘stuck’, depressed, unable to continue, challenged and confused. Understanding threshold concepts and the liminal state in [accounting] education can more adequately assist students during this time” (Kiley & Wisker, 2009: 432).

For other students, it seems that they bring with them a fixed preconception or *attitude* (Ballie & Johnson, 2008) that acts as a barrier to their engagement, rejecting any attempt to change such a preconception.

- During the course, I struggled with the discussions in class the most. I found this time wasting and disruptive, I think that it stops the flow of the class and I found it difficult to get back into the class work and follow the information after a discussion – especially because most of the time the discussion periods were too long and most of the class would not be discussing the topic. This for me personally made class difficult and I didn’t want to attend class, because I felt I could learn more outside of class, with less disruptions.
- It [reflective journal] was [sic] a waste of valuable time.

For a number of students, some of the course concepts proved troublesome, as they were *counter-intuitive* or *alien*. These underlying concepts include the development of reflective practice as a key skill requirement for professional accountants, the ability to think critically, the ability to apply professional judgement when there is not a single solution to an accounting problem. Some students felt that the material presented in ACCT 103 was not relevant, as it failed to conform to their preconception of what constitutes accounting:

- No. It wasn’t anything to do with learning the content of the course, each week you just write what you did.
- The work groups should be more related to accounting and not [to] management. As an accounting course, I feel it didn’t focus strongly enough on accounting. The only material I found interesting was the finance section.
- Making the workshop more relevant to accounting, I found a lot of the content to come from different aspects of commerce e.g. marketing & business management. This made the workshop seem useless, as we were not learning accounting related material.

For other students, the knowledge was *inert*, as students could not see either its relevance or how it should be integrated. Inert knowledge is troublesome because students often need to learn conceptually difficult knowledge in isolation and then integrate this newly acquired knowledge in a new way. In accounting, this knowledge can often be conceptually difficult, as learners cannot see the relevance of the topic or make personal sense of it. Examples of inert knowledge were found in the following students’ reflections:

- I wasted time on things not related to accounting.
- Some of the questions made you look at a situation differently and come up with better answers. Other questions I didn’t feel had any relevance and I felt like I was wasting my time.
- I would prefer learning tutorials rather than these groups we do. I find that reinforcing work we have done in class is better for my learning than made up business exercises.
- I prefer the workshop to complement the lectures. Practicing with exercises rather than hypothetical business workshop. It was too much work to do every week and time consuming that I could have invested in studying the materials from ACCT [sic] lectures or study any other materials from my other papers.

Other students, however, still found a transformative shift from their preconception of accounting as objective, consisting of profit calculation with a balanced statement of financial position, to the

reality that often in what they perceive as real accounting problems there is no correct answer, to be problematic and at times overwhelming:

- I do like learning new things but I find it difficult sometimes when I struggle to enjoy the subject and that usually comes from not understanding what is meant to be learnt.
- To make the questions specific and not so broad.
- I felt that the workshops were a little disappointing as many times we were unsure as to what to do and how it related to accounting. Many of the questions and things that were required of us were opinion-based and we were unsure as to how they were to be marked and how they could mark a personal opinion.
- I wondered myself if it was actually the writer's [lecturer's, in writing the course material] intent to be vague and frustrating because that is actually a common occurrence in the workplace, hence the relative industry perspective.

These students' illustrative quotes demonstrate how commonly held preconceptions of accounting can prove problematic for a learner's successful progression in introductory accounting.

Implications for Accounting educators

Threshold concepts represent critical junctures in a student's learning journey. Although not a threshold concept in a traditional sense, the research data strongly suggest that student-identified preconceptions of the accounting discipline may constitute a major barrier to effective and successful student learning in introductory accounting courses.

It appears to be the knowledge and processes⁴ of accounting that prove conceptually difficult for students. The processes or ways of thinking in accounting are what Perkins (2006: 42) describes as *epistemes*:

... a system of ideas or way of understanding that allows us to establish knowledge. ... the importance of students understanding the structure of the disciplines they are studying. ... epistemes are manners of justifying, explaining, solving problems, conducting enquiries, and designing and validating various kinds of products or outcomes.

However, it could be argued, and has been demonstrated through students' reflective comments, that as learners begin to rethink and readjust their preconceptions of accounting, they enter a liminal space where they are confronted with different viewpoints and ways of creating meaning, essential to the *becoming* of an accountant. This transformation, in turn creates a change in learner identity as learners begin to shed their previously held conceptions of the discipline and start to think like accountants. We would argue that a perceptual threshold barrier exists within introductory accounting which, once overcome, results in "a transformed internal view of subject matter" in the accounting discipline (Meyer & Land, 2006a: 3).

The process of changing what we know, expect, or are aware of, means a change in identity as a learner, which is often uncomfortable and confrontational for learners. Student-derived preconceptions of accounting emphasise the ways of thinking and practising in accounting, namely, fear, difficulty, calculations and numerically-based and objective determinates, with a common solution. When these beliefs are challenged through engagement with the course material, there appears to be resistance by students. Ballie and Johnson (2008: 137) term this resistance a "fear of uncertainty". In this respect, accounting students are similar to engineering students, who are used to a right or wrong answer being provided and are focused heavily on their grades (Ballie & Johnson, 2008). This is illustrated in the following student's learning experience:

This course was an absolute waste of time. I have studied accounting at school and wish this course was more relevant to accounting. I learnt nothing in this course. Accounting requires the calculation of profit and the preparation of financial statements and we did little practice on this. I

want worked examples in tuts that the tutor goes through so that we have something to study for the exam, not these reflective journals that have nothing at all to do with accounting.

As students readjust and rethink their previously held conceptions of accounting, it is up to accounting educators to be aware of and to assist in this difficult transition. This threshold must first be passed before significant new knowledge can be learned. In order to assist with this transition, accounting educators need to recognise, embrace and address students' preconceptions of the accounting discipline. This could be achieved through reflective practice, active dialogue and/or engagement of students. Providing students with the opportunity to reflect on their learning enables them to take responsibility for their learning and allows them an opportunity to observe a cognitive change in their thought processes. The study found evidence of such reflective practice and engagement:

- My journaling experience has made me a reflective student, and the process of reflection is ingrained in my practice now. I know that I will continue to improve my study.
- I have gained many benefits from writing these journal entries as I can clearly see, in hindsight, how my writing has changed to indicate points in a clearer way. I believe this has told me something about my thinking process in this course as things seem to be a lot clearer.
- In conclusion, I feel that this course, maybe due to the way it was run or a significant realisation about my work ethic, or both, has been hugely beneficial to me the second time round.

Engaging students in active dialogue appears to be critical to their successful transition through a perceptual threshold barrier. This active dialogue in ACCT 103 takes place both internally, through the completion of critically reflective journal entries each week and their ultimate summation at semester end, and externally, through group involvement, critical class discussion and debate. The following comments from students' course evaluations illustrate their views about this learning process:

- At first, I thought that the workshops were stupid and that I wasn't learning anything, yet now, as I do this reflective summary, I realise that they were a big help. This is because it meant that I had to do something on accounting each week that I may not have done otherwise and it also allowed me to learn off the other members in my group, who had more knowledge of the material.
- I enjoyed helping my fellow group members, because I could explain the concepts in a form that they could easily understand, easier than reading through their lecture notes or from a textbook, but it also helped me understand concepts even more and to refresh my memory.
- I'm also very glad that I have overcome my misconceptions about accounting and in the end turned out to find the course very valuable and enjoyable.

Conclusion

This paper argues that students' preconceptions of accounting represent a preconceptual threshold barrier to their learning in introductory accounting. The research data collected in ACCT 103 provide support for previous studies in introductory accounting (Lucas, 2000, 2001; Lucas & Meyer, 2005; Mladenovic, 2000; Weil, 1989), which found that students commonly hold negative preconceptions, viewing accounting as boring, mundane and difficult, a technical subject with a predominant focus on mathematical calculations and objective reasoning, a course existing in a business environment, but with very little personal relevance, or room for judgement or societal impact.

The threshold concept framework "provides a context in which academics are able to question their own conceptions, those of the textbook, the narrative nature of the syllabus, and the presence

of authorised and alternative conceptual views of their discipline” (Lucas & Mladenovic, 2007: 244). Accounting educators need to become aware of and understand such thresholds as they occur within their discipline and be prepared to acknowledge and address these in the introductory curriculum, in order to better assist students to negotiate their way successfully through a perceptual threshold. A focus on the thought processes underlying accounting, including its commonly held preconceptions, rather than on the technical content itself, may be a spark to ignite a major shift in how students perceive and learn the discipline of accounting. One means of doing this is by allowing students an opportunity to engage in reflective practice, as in the words of one student:

I felt this [reflective exercise] was a positive way to engage students in the course and make them accountable for their learning progress. It has been a constructive exercise to ... reflect on learning progress and how my initial thoughts of accounting have developed. At the start of this course, I feared going to an accounting lecture as it was all about numbers, but the numbers are a small part - accounting requires analysis and professional judgement where there is no one answer to accounting practice.

Notes

1. The term ‘successfully’ is used in this context to represent an adequate level of understanding of the course material in order to progress to and through advanced-level study.
2. The New Zealand Institute of Chartered Accountants (NZICA) is the professional accreditation body for chartered accountants in New Zealand.
3. It is important to note at this point the difference between a student’s preconception and a more developed and informed perception. The meaning of a preconception used in the context of this study incorporates a conception or opinion that is formed prior to any actual knowledge gained or experience within a tertiary learning context. This can be contrasted with a perception, which is defined as a way of regarding, understanding or interpreting something; the formation of a mental impression (Oxford English Dictionary, 2008).
4. Lucas & Mladenovic describe these processes as the organising structure or framework of accounting (2006: 153-154). They could alternatively be viewed as ways of thinking or becoming in accounting (Ballie & Johnson, 2008).

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