# Threshold capability development in intensive mode business units

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## Abstract

**Purpose** – The purpose of this paper is to explore: student perceptions of threshold concepts and capabilities in postgraduate business education, and the potential impacts of intensive modes of teaching on student understanding of threshold concepts and development of threshold capabilities.

**Design/methodology/approach** – The student experience of learning was studied in two business units: strategic management, and accounting. The method involved two phases. In the first, students and unit coordinators identified and justified potential threshold concepts and capabilities. In the second, themes were rationalized.

**Findings** – Significantly more so in intensive mode, the opportunity to ask questions was reported by student participants to support their development of the nominated threshold capabilities. This and other factors reported by students to support their learning in intensive mode are consistent with supporting students to traverse the liminal space within the limited time available in intensive mode.

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**Research limitations/implications** – Respondents from future cohorts will address the small participant numbers. Studies in only two units are reported. Studies in other disciplines are presented elsewhere.

**Practical implications** – The findings will be important to educators using intensive mode teaching in business, and researchers working within the framework.

**Originality/value** – This is the first study to explore the potential impacts of intensive modes of teaching on student understanding of threshold concepts and development of threshold capabilities.

**Keywords** Management, Accounting, Threshold concepts, Business, Intensive mode, Threshold capabilities

**Paper type** Research paper

## 1. Introduction

The theory of threshold concepts was first proposed by Meyer and Land (2003), and asserts that every discipline has concepts that are transformative ontologically and epistemologically. Since this time the theory has been explored in discipline areas such as mathematics, engineering, gender studies and business. The theory of threshold concepts was expanded by merging it with capability theory, which proposes that in higher education students should develop capabilities to address unseen problems (Bowden, 2004). According to Baillie *et al.* (2013) threshold capabilities represent the ability to respond to previously unseen problems. These capabilities are thresholds themselves and usually also require understanding of other threshold concepts. Like threshold concepts, threshold capabilities are transformative and critical to future learning and practice (Baillie *et al.*, 2013). Therefore they are of paramount importance when developing curricula. As more intensive modes of teaching are used in postgraduate business education it is critical those charged with curriculum design are aware of the mode's impact on student attainment of threshold concepts and capabilities.

This paper explores student perceptions of threshold concepts and capabilities in postgraduate business education. It is the first to explore the potential impacts of intensive modes of teaching on student understanding of threshold concepts and development of threshold capabilities. The findings reported here will be especially important to educators using or considering an intensive mode to teach business units, and also to researchers considering working within the new framework of threshold capability theory.

## 2. Theoretical framework

According to Meyer and Land (2005), most disciplines have threshold concepts that act as "conceptual gateways" or "portals" to once inaccessible and potentially "troublesome" ways of thinking. These threshold concepts are critical to future learning and working in the discipline and are usually troublesome for students in one of several ways such as being foreign, complex, counter-intuitive or requiring unfamiliar language (Perkins, 2006).

Few previous studies of the theory of threshold concepts consider the relatively new threshold capability framework. However, threshold capability is more closely aligned with learning outcomes, which are central to curriculum development (Biggs, 2003). Learning outcomes identify what students should be able to do upon completing a unit and not only concepts that they should be able to understand. In the development of the foundation units of a major, Male and Baillie (2014) found that focussing on threshold capabilities and threshold concepts was more valuable than focussing on threshold concepts alone. Within the framework of threshold concepts and threshold capabilities researchers focus on the students' experience of troublesome and transformative learning, and the teachers' understanding of the importance of concepts

and capabilities in the discipline. A particular strength of the framework is the recognition of diversity among students and their backgrounds. Working within the framework of threshold concepts and threshold capabilities, researchers focus their attention on the most transformative and troublesome learning. It is understood within the framework that it can take extensive time for a student to overcome a threshold. In intensive mode, the time available for a student to learn is usually more limited than in traditional mode. Therefore, threshold concept theory and threshold capability theory provided a framework well-suited to exploring the learning that was both important and most likely to be vulnerable with intensive mode.

Threshold concepts have emerged as a focus of scholars in the pedagogy of business education. In fact, the original work of Meyer and Land (2003) was based on economics education. Since this time a number of articles have emerged on this topic, including a special issue of *Journal of Management Education* in 2015 exploring the theory and practice of threshold concepts in management education. Wright and Gilmore (2012) argue that an understanding of threshold concepts can better inform the design of introductory management units in undergraduate programs. In particular, they explore how the idea that "management as a practice informed by theory" (p. 616) acts as a threshold concept where many undergraduate students become stuck. In the area of leadership education, Hawkins and Edwards (2015) argue that encountering the concept of doubt is a critical part of the journey to thinking and acting like a leader, while Yip and Raelin (2011) identify situational leadership and shared leadership as threshold concepts with potentially transformational impacts on students. A recent paper by Nathan (2015) supports the concept of strategic thinking as an important threshold in strategic management education.

In the accounting discipline, Magdziarz *et al.* (2012) undertook a preliminary study of threshold concepts in financial accounting. Through a series of interviews with Australian academics they identify a number of potential threshold concepts for students, including duality of transactions/double-entry accounting, cash flow statements/cash budgets and accrual accounting. McGuigan and Weil found that the preconceptions students hold about accounting prior to commencing their studies act as a "preconceptual threshold" in their learning, and as such:

> This preconceptual threshold needs to be identified, entered, explored and overcome with the guidance of the education, to enable the learner to develop informed perceptions and impressions of accounting and to acquire a level of understanding beyond the superficial (McGuigan and Weil, 2011, p. 16).

Within threshold concept theory, the "liminal space" is the state experienced by a student for whom a threshold has come into view but is not yet comfortable (Meyer and Land, 2003, p. 10). In this state the student experiences the troublesome features of the threshold. The time required by a student to traverse the liminal space varies by student, ranging from a single lesson to longer than a unit. In a phenomenographic study in computer science, Boustedt (2010) found that it is insufficient to explain theory to students. Instead it is important for students to apply concepts, especially in professional contexts, to solve real-world problems in order to traverse the liminal space. Is this possible with intensive mode? Similarly, referring to strategic thinking, Nathan (2015, p. 366) states that students need "soak time" in the liminal space. Based on the theory, it was expected that the shorter time spanned by many intensive mode units could limit the opportunity for students to traverse the liminal space and that students may need additional support to do so in this mode compared with traditional modes. Otherwise, intensive mode could lead to fewer students overcoming the thresholds. Therefore,

studying the students' experience of threshold concept and threshold capability development in units with intensive modes of delivery was overdue.

Intensive mode teaching (IMT) involves students engaging in facilitated learning activities or classes over more hours in a day and on fewer days than in a traditional unit in the discipline. Davies (2006) reported that IMT had been used by most Australian business schools on and offshore. The mode is often chosen so that students can undertake coursework studies while minimizing interruption to their employment. For example, Ladyshewsky and Taplin (2014) found postgraduate students chose IMT to help them balance work/lifestyle with educational commitments.

Educators require evidence-based recommendations for enhancing learning within intensive-mode units. Previous studies have asked whether IMT is better or worse than traditional modes (e.g. Kucsera and Zimmaro (2010)). However, little is understood about student attainment of threshold concepts and capabilities in units with IMT. By working within this framework this study investigated students' learning with IMT using a different lens from previous studies of IMT. The objective of this paper is to examine IMT using threshold concepts and capabilities as the theoretical framework but we do not attempt to establish any causal relationship between IMT and the attainment of threshold concepts.

This study focussed on two core units (subjects) within most Master of Business Administration (MBA) degrees – namely accounting and strategic management – and addressed the following research questions:

*RQ1.* What are students' experiences of threshold capability development in the two core business units when taught with intensive mode?

*RQ2.* How can students understand threshold concepts and develop threshold capabilities in the business units taught in intensive mode?

*RQ3.* What factors help and hinder students in understanding threshold concepts and developing threshold capabilities?

*RQ4.* How can students be supported to overcome threshold concepts and develop threshold capabilities in business units taught in intensive mode?

*RQ5.* Are there differences between how students learn and can be supported to learn in intensive mode and another mode?

## 3. Context
This paper reports a study of students' experiences of threshold capability development in two graduate business units: an accounting unit taught in an intensive mode and the same accounting unit taught in a flexible (more traditional) mode, and a unit on strategic management taught in intensive mode. These units were part of the MBA programs at two Australian universities, and are classified under the Australian Qualification Framework as a level nine qualification, where:

> […] graduates at this level will apply knowledge and skills to demonstrate autonomy, expert judgment, adaptability, and responsibility as a practitioner or learner (Australian Qualifications Framework Council, 2013, p. 59).

MBA programs are targeted at people – usually mid-career – who are intending to move into senior management positions in the future. The two units were selected for a few reasons. First, units in accounting and strategic management are common to most

MBA programs in Australia and internationally. Second, the accounting unit is normally one of the first units taken in an MBA, while strategic management as a capstone is normally one of the last units, thus enabling investigation of the relationship between IMT and attainment of threshold concepts/capabilities at different stages of a student's MBA journey. Third, it allows exploration of whether IMT created more challenges for a unit focussed on technical skills like accounting as compared to a less technical unit like strategic management. IMT has long been a common mode of teaching in MBA programs because it can be undertaken with minimal disruption to a career; students can complete a unit within half the duration of a traditional semester and even complete an MBA in one year rather than two or more. The challenge with IMT is to ensure graduates from these MBA programs attain threshold concepts and capabilities despite the shorter program duration.

### 3.1 Strategic management unit

The strategic management unit is a capstone within an MBA program, and is normally taken by students at the end of their program. The aim of strategic management is to give students the analytic skills required to make a holistic assessment of their operating environment (both within and outside the firm), and make strategic decisions about the "best" future use of scarce resources – "best" being defined in terms of earning above average returns relative to other firms in areas of meaning to an organizational stakeholder.

The unit is organized into four sections, beginning with a focus on what defines a business decision as strategic, the role of strategy and strategic management in organizations, and the factors that constrain an organization's ability to develop and implement strategy. Next the unit builds students' skills in strategic analysis (looking at both internal and external analysis), before teaching them processes for turning the findings of strategic analysis into meaningful business and corporate-level strategies (the process of strategy formulation). The final part of the unit explores issues associated with strategy implementation and looks at how issues such as structure, governance and leadership impact this process.

Units in the MBA program are primarily offered during the standard teaching semesters, with these semesters being of 13 weeks duration. Occasionally MBA units will also be offered during a 12-week summer semester (November to February). Unit content would normally be provided to students on a weekly basis through a mix of lectures and tutorials, and assessment would be spaced across the course of the semester.

The strategic management unit is delivered in an intensive mode during the course of the standard teaching semester. In this unit, all subject content is made available to students at the start of the teaching program through an online learning management system, in the form of video-recorded lectures, open-access content and readings. Over a five-week teaching period (weeks three to seven of semester) five one-day workshops are held, where there is opportunity for face-to-face discussion of core concepts, application of theory to business situations (through case analysis) and preparation for assessment. After completion of this teaching period, students have a period of three and a half weeks to complete the major assessment task in the unit (self-directed, with no formal class time available).

There are three assessment tasks undertaken in this unit. The first is a series of online discussion boards, where students are assessed on the quality of their contributions to peer-to-peer discussion of strategic management theory and practice. The second is a journal article critique designed to assess understanding of key theoretical

arguments in strategic management. The third, and major, assessment task is a detailed strategic analysis of a "live case" organization, where students undertake a detailed strategic analysis of a real-world organization and the industry in which it operates, and write a formal report outlining the strategic plan for the organization over the next five years. This final assessment task is worth 70 percent of the marks for this unit.

### 3.2 Accounting unit

Accounting for managers is a required unit in the MBA degree at the research intensive Australian university. The use of financial information permeates all aspects of business decisions irrespective of the nature of a business entity. Successful managers are those who understand the financial implications of their decisions and actions. The first and major part of the unit provides the skills necessary to read and interpret the financial statements of organizations. The second part of the unit focusses on the types of accounting information made available within the organization. Hence the unit has two major goals. The first is to develop an ability to understand, interpret and use financial statements. The second is to develop an awareness of the basis for preparation and the strategic use of internal accounting information.

MBA units are traditionally taught on a 12-week trimester basis with weekly classes of three hours in the evenings. However, a number of units are taught in a range of intensive modes varying from six classes of six hours every second Saturday through to Saturday and Sunday on two weekends. The accounting unit used in this study was offered in two modes to the full-time and part-time students. Classes in the full-time program were held over seven consecutive Mondays for five hours each day. Classes in the part-time flexible program consisted of eight weekly sessions of three hours and two Saturdays of six hours.

The assessments in both units were similar, using team-based learning[1]. Teams complete four in-class readiness assurance tests or quizzes consisting of ten multiple choice questions over the teaching period and they complete the test individually and then retake the same test in teams using an IF AT sheet or scratchie[2]. The benefit of this approach is that students learn from their peers and develop and appreciate team work skills. Teams also complete two major team exercises for assessment during class time. The final assessment is a final examination worth around 40 percent.

The unit for the full-time program was taught in an intensive mode as the MBA program had to be completed in one year. This was the first time the unit was taught in this mode and all units in the full-time MBA program are delivered in an intensive mode.

The part-time or flexible MBA program was taught on a partial intensive-mode basis as some of the learning activities require an extended period of class time to complete and hence the reason for two Saturday classes.

### 4. Method

The method used to examine student experiences of threshold concepts and development of threshold capabilities with IMT was adapted from that developed by Male and Baillie (2011) and involved two phases.

### 4.1 Phase 1: exploratory

In the first, exploratory phase, participants – including students and unit coordinators (who are the first two authors of the paper) – were invited to identify potential threshold concepts and capabilities. In this phase data were collected from students in a 30-minute in-class mini-workshop in the flexible accounting unit and the strategic

management unit (both undertaken during the final class), and a 45-minute focus group with students in the intensive accounting unit outside normal class time.

In the workshops and the focus group, the unit coordinator introduced the researcher and then left the room. The researcher explained the study and the theoretical frameworks of threshold concepts and threshold capabilities, including the compulsory features of thresholds (transformative ontologically and epistemologically) and common features of thresholds (troublesome, irreversible, integrative and discursive) as described in threshold concept theory. The explanation also included types of troublesome knowledge (see Introduction). Using only open-ended questions to avoid leading the students, the researcher then facilitated a discussion about thresholds that students had experienced in the unit and what they had done to overcome them, inviting students to offer threshold concepts they had experienced, how they were transformative and how they were challenging, and threshold capabilities that required one or more threshold concepts, and how developing these had been transformative and challenging. Finally, students discussed the factors about the unit that had supported and hindered their development of one threshold capability. The purpose of the discussion was to ensure that students shared a common understanding of the theoretical framework.

The focus group for the intensive-mode accounting unit was similar to the workshops except that the discussion was longer and recorded. The focus group was held after the unit had been completed and students were undertaking later units in the full-time MBA program so they had time to reflect on the unit. Students completed demographic questionnaires and questionnaires about the thresholds, with additional questions about the unit and their own characteristics that supported or hindered them in developing the threshold capabilities. From the workshops, the questionnaire responses only from students who enclosed signed consent forms were transcribed for analysis. All responses from the focus group were transcribed for analysis. Notes were also taken by the researcher.

Also in the exploratory phase, the unit coordinators were interviewed for 30 to 45 minutes. They were invited to identify threshold concepts and capabilities that they had observed students finding transformative and troublesome, providing evidence such as descriptions of students' questions. They were also invited to describe features of their units they had observed to support and hinder students' development of identified thresholds and features of students that supported or hindered their development of identified thresholds. Interviews were recorded and transcribed.

*4.1.1 Analysis.* To complete the exploratory phase, research notes, transcribed audio recordings and transcribed student questionnaire responses were analyzed using Nvivo ™ to manage coding of participant comments. Analysis involved searching for comments that identified a potential threshold concept or capability (evidenced by a comment suggesting experience of transformative learning), descriptions of how students found these to be troublesome and reported features of the unit or the student that supported or hindered students in developing threshold capabilities. Themes were identified among the threshold concepts, threshold capabilities, and unit and personal features that helped and hindered students in overcoming the thresholds.

*4.2 Phase 2: rationalization*
The second phase of the method was to rationalize the identified potential thresholds to a shorter list of most commonly experienced thresholds without repetition. The lead researcher presented the themes identified in the analysis and led a discussion with other researchers in the team and the unit coordinator or coordinators. The duration

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was 45 minutes. Unit coordinators and research team members referred to their understanding of the subject areas of the units and aspects of the teaching and assessment that the students noted in their comments, as the basis of the negotiation.

*4.2.1 Analysis.* Consequently the researcher, based on the negotiation, reduced and refined the themes that had been identified in the analysis of exploratory data.

### 4.3 Participants

Enrollment and participation data for the in-class workshops and the focus group are included in Table I. In terms of the age profile of participants, the mean age of students completing the strategic management unit was 29.3 years (SD = 9.0 years), while for the intensive (full-time) and flexible (part-time) accounting units the means were 31.5 years (SD = 4.9 years) and 37.5 years (SD = 7.4 years), respectively. Further demographic data are outlined in Table II.

## 5. Findings and discussion

In this section we explore the key findings from the two units included in the study, looking at the types of threshold concepts and capabilities identified by students and the factors that hindered and supported them in attaining these. Included in the findings are the views of the unit coordinators about important learning outcomes and threshold concepts for students.

### 5.1 Strategic management

*5.1.1 Threshold concepts.* The first threshold concept identified by students was industry (or market) definition. A key element of strategic analysis is to define the industry in which a firm competes, and in doing so come up with novel definitions that open up new market opportunities. Defining the industry informs who the business

| Unit | Enrollments | Participation | Response rate (%) |
|---|---|---|---|
| Strategic management | 21 | 13 | 62 |
| Accounting (intensive mode) | 20 | 17 | 85 |
| Accounting (flexible mode) | 45 | 12 | 27 |

**Table I.**
Response rates in the exploratory stage

| Demographic characteristic | Value | SM | % | $A_i$ | % | $A_f$ | % |
|---|---|---|---|---|---|---|---|
| Sex | Female | 6 | 46.2 | 3 | 17.6 | 4 | 33.3 |
| | Male | 7 | 53.8 | 14 | 82.4 | 8 | 66.7 |
| English as a second language | Yes | 10 | 76.9 | 14 | 82.4 | 1 | 8.3 |
| | No | 3 | 23.1 | 3 | 17.6 | 11 | 91.7 |
| Domestic or international enrollment | Domestic | 3 | 23.1 | 17 | 100.0 | 12 | 100.0 |
| | International | 10 | 76.9 | 0 | 0 | 0 | 0.0 |
| Hours worked during an average teaching week during the unit | More than 20[a] | 2 | 15.4 | 0 | 0.0 | 10 | 83.3 |
| Primary carer for others during the unit | Always[a] | 1 | 7.7 | 1 | 5.9 | 1 | 8.3 |

**Notes:** SM, strategic management unit in intensive mode; $A_i$, accounting unit in intensive (full-time) mode; $A_f$, accounting unit in flexi mode (part-time). [a]The final two demographic characteristics listed in this table refer to only the most extreme of the fixed response options

**Table II.**
Demographic data for student participants in in-class workshops and the focus group

views as their customers, competitors and suppliers, and the broader forces of change that will impact on corporate strategy in the future. From a student perspective, being able to develop an industry definition is critical to their strategic analysis. As one student stated:

> We have a major capstone for an organization that I still struggle to identify the industry (for). Therefore, can't define suppliers, etc., which will block the remaining process all the way through to incorrect strategy recommendation.

This quote demonstrates neatly how students can become "stuck" at a threshold concept in strategic management. In this case the student is trying to "[…] identify THE industry" (emphasis added) in which the organization competes. However, the key part of this stage of analysis is to accept that there are often multiple ways in which the industry could be (re)defined, and that managers should consider the strategic consequences flowing from different industry definitions.

The unit coordinator similarly identified industry definition as a challenging concept for students of strategic management, with many students expecting "industry" to be defined in a clear and consistent manner at all times. Failure to realize or accept that industry boundaries and composition are open to a degree of (re)interpretation meant that students often failed to realize new strategic opportunities (or potential strategic threats) in their live case assessment. Given the importance of this threshold concept, the unit coordinator spends much of the first learning module looking at models for industry definition, and industry definition is the focus of the first meeting with the live case organization.

A second threshold concept identified by students was the notion of dynamic capabilities, which are defined by Eisenhardt and Martin (2000, p. 110) as:

> The firm's processes that use resources – specifically the processes to integrate, reconfigure, gain and release resources – to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die.

Closely related to dynamic capabilities was the third threshold concept experienced by students, core competence. The idea of core competence was first developed by Prahalad and Hamel (1990) and represents combinations of resources and skills (capabilities) that are unique to a business and allow it to create superior value for customers relative to the competition. As one of the students identified:

> It [core competence] is very costly to attain and maintain […] Company/person may need to spend a lot of time/money on R&D. If you/company have unique set of skills [core competence], demand will be more.

The unit coordinator felt that threshold concepts like dynamic capabilities and core competence represent "troublesome knowledge" for students of strategic management. Dynamic capabilities and core competence are embedded in the complex processes and routines of a business, and the link between these concepts and strategic success (i.e. competitive advantage) is not always clear and easily understood (even by people working within a business). Because of their link to competitive advantage businesses often go to great lengths to keep dynamic capabilities and core competencies hidden, which potentially makes it difficult for students to observe them in action. The unit coordinator also felt that while students may have pre-conceived ideas about concepts

like strategy, competitor and industry they may not have previously encountered the concepts of dynamic capabilities and core competence in their business studies or previous work experience.

A final threshold concept identified by students in the focus group was that of levels of strategy – as one student stated, the idea that there were "strategies at various levels of an organizational hierarchy." Strategic management requires a holistic view of the organization, and an appreciation on the interconnectedness between strategy at the functional level, business level and corporate level of the business. Based on experience, the unit coordinator believed functional- and business-level strategy were the more accessible concepts for students – students could broadly understand the need for marketing and HR strategy, or that a business unit might need to focus on differentiation or lower costs as a source of advantage. However, corporate-level strategy (decisions about diversification, divestment and the relationship between business units owned by a corporation) was more challenging. Students often struggled to understand how organizations would decide to allocate resources across business units, and how to ensure alignment between corporate- and business-level strategy (especially when an organization was pursuing unrelated diversification).

*5.1.2 Threshold capabilities*. Analysis of the responses collected from students during the in-class mini-workshop indicated some support for strategic analysis as a threshold capability developed by students in this unit. According to the students, strategic analysis is:

How to analyse a company, the industry, and competitors.

Analytical and problem-solving skills are applied to live case study [business/organization][…].

A skill an organization person should develop to overcome competition[…].

Students showed an understanding that strategic analysis is a practical skill (capability), which involves gathering a broad range of information about the business situation and synthesizing this information into a meaningful picture of the future strategic landscape facing the business. In line with the work of Baillie *et al.* (2013) this capability draws together a number of threshold concepts, such as industry definition, dynamic capabilities and core competence – a thorough strategic analysis involves understanding the ways in which an industry is and can be defined, and the dynamic capabilities and core competence that will increase the likelihood of strategic success.

*5.1.3 Barriers to attaining threshold concepts and capabilities in IMT*. Analysis of the workshop data revealed barriers to attaining threshold concepts among students undertaking the intensive-mode version of strategic management. These barriers were coded as relating to either curriculum design or personal factors.

In terms of the curriculum design barriers, the first issue was the lack of awareness among students of what intensive-mode units involved. Students reported that university systems (such as the unit guide) did not indicate fully to them that the unit was offered in an intensive mode, meaning they were mentally unprepared for this mode of study. Similarly, as only intensive mode was available during the semester there was no option for students to opt-out of this study mode. Furthermore, all but two of the students undertaking the unit were enrolled in other units, and these units were offered in a standard delivery mode (lectures and tutorials delivered over a full 13-week of the semester). This potentially created experiential issues for students as they alternated between study modes during the course of the semester. As one student

stated, it also created an issue of "compression and overlapping of assessments" between the intensive-mode unit and their other units of study during the semester.

A second curriculum design barrier related to the design of the unit itself. For example, the unit involved five-day-long workshops held on Saturdays. Holding classes on a weekend impacted on the student's personal time:

It is done on Saturday so my time for recreation was involved in it.

Or as another student stated:

The unit has all of the theory at the front-end with weekly assessments and major paper. The workshop is on a Saturday. For a full-time worker to fit "EVERYTHING" on one day is impossible.

The intensity of the day-long class left some students overwhelmed:

Sometimes the lengthy hours makes your mind dull.

Potentially, the amount of activity compressed into these workshop sessions acted as a barrier to in-depth and prolonged reflection by students of troublesome threshold concepts. Similarly, information overload may have meant that important threshold concepts remained under-explored by the students, with only surface learning possible.

Some of the personal barriers related to students' work and family commitments. For example, one student reported being away for three weeks while caring for a sick family member – owing to the intensive mode of the unit the student missed 60 percent of the workshop times. Similarly, a part-time MBA student expressed frustration at the tensions created by work and study commitments:

I work full-time. When I started the MBA it was aimed at GMs working. I think the focus (target) has moved to international students who by nature are full-time and have more time to complete workload that has been front loaded in what was originally a 13-week block (semester).

Other students spoke of the challenges in balancing time across units, especially when one is undertaken in an intensive mode:

Taking multiple units simultaneously requires the ability to grasp many concepts in a short period. I need to improve my compartmentalization of learning between units at times to reduce confusion and using incorrect examples.

Having enough time to feel like I understand the information and learning to a point that I can apply them. This is challenging.

The perceived shortness of time in intensive-mode units acted as a potential barrier to deeper reflection by students about threshold concepts.

A final personal barrier related to cultural and linguistic differences in the student cohort. Of the participants in this unit 77 percent were international students with English as an additional language. Some students indicated language as a major impediment to understanding concepts, and that concepts often did not translate well across languages. Similarly, language and culture appears to have created a "troublesome" aspect to some concepts:

Initially (the) way we thought-our own pre-set of ideas-created (a) barrier for the things we wanted to understand. We thought (of) strategy in the way we think it is, not how a strategist would want it.

Concept was quite broad and included many sub-parts like learning, since English isn't my first language; and sometimes concepts are too complex.

It is likely that some of the more troubling aspects of strategic management for students related to cultural differences in the way strategy is conceived and implemented – for example, different cultural attitudes to risk, time and the desired returns for organizational stakeholders.

*5.1.4 Factors that supported the attainment of threshold concepts and capabilities.* Again, there were several curriculum design and personal factors that students felt enhanced their attainment of threshold concepts. The first of these was the demonstration of the links between theory and the practice of strategic management. Students reported liking the use of "real cases," and "the practical nature of workshops rather than theoretical teaching." One student stated that:

Bringing and exploring businesses that are around us (business names) helped us to understand it more clearly because we knew the context and application.

As Wright and Gilmore (2012) comment about management more generally, (strategic) management is practice informed by theory, and the applied nature of this unit allowed students to experience these threshold concepts as they would in practice. For example, the major assessment task for the unit requires students to "think and act like a strategist" in developing a five-year strategic plan for real-world business. The students are embedded in the business, and work with key business stakeholders to develop the strategy. This plan is then presented to the board at the end of the unit.

A second element of unit design identified by students as enhancing attainment of threshold concepts was the online discussion boards. These discussion boards were held weekly during the course of the unit (the intensive teaching period and the assessment period), and allowed for peer-to-peer discussion and reflection on unit content. These discussion boards allow students to share their understanding and experiences of strategy and strategic management, and reinforce class-based learning.

In terms of personal factors that enhanced attainment of threshold concepts, previous or current work experience seems to have been critical:

I was a marketing intern in a China trading company. The experience of this has helped me improve my coordinate ability.

My workplace experience gave me multiple examples that I could test my conceptual thinking against.

Currently working full-time in an area that I can apply the learning.

I have the background of marketing and strategic management so that I have something to talk about the topic.

This experience provides a practical context through which strategic management can be understood (in the same way as the use of a live case in assessment provides context), and provides students within an existing (pre) conception against which to test new knowledge gained from completing the unit.

Similarly, self-management and well established study skills seem to have been critical to students, given the intensive nature of delivery used in this unit:

Be a good manager and control my time

Attempted to find more time to spend in learning and understanding the concepts and foundations of the unit.

Spent a lot of time in research and learning new concepts/skills and perfected it

Finally, peer-based discussion – outside of the formal discussion boards – was also identified by some students as a way to understand a threshold concept

*5.2 Accounting*
*5.2.1 Threshold concepts.* The first threshold concept identified by students in both groups was the concept of *accrual vs cash accounting* which is one identified by McGuigan and Weil (2011). The difficulty for students in understanding the accruals process involves the allocation of costs incurred in one period such as the purchase of a tractor to a number of future periods as an expense is a challenging concept as supported by the following student comment:

I suppose just understanding the concept of allocating costs to a time when they weren't incurred, I suppose, it just can take a little bit of time […] to get your head around that properly. And it is quite a key concept I think in accounting. I had heard it before but I hadn't […] at work we didn't use it, and the accountants had tried to explain it. But I hadn't properly understood it, although when [the lecturer] explained it, it started to make sense. So I would say that that might be an example [of a threshold].

One of the important learning outcomes for the unit is for students to appreciate the differences between accrual-based profit and cash flows. The unit coordinator regards this as a significant learning outcome for MBA students and a concept that can be very troublesome and difficult for some students. Their ability to be able to move through the liminal space and understand the difference between accrual and cash accounting is important for them to achieve the threshold capability of understanding financial statements.

The second threshold concept observed by students in both the IMT unit and the flexible unit was the concept of earnings management. Earnings management involves managers using the choices available within accounting rules to report the most favorable net profit to shareholders. This does not include any fraudulent accounting practices. The concept of earnings management was a particularly difficult concept according to many students as demonstrated by the following student comment:

I think the idea of it was that I took away is, that companies use different accounting sort of ways of capturing their expenditure, or changes in values of things, depreciation and things like that, to reflect different profit and loses each year. So understanding earnings management means you can look at different companies, look at the number at the front and then go a bit deeper and work out what's really happening behind it, whether it's a good sign, a bad sign, what will happen in the future years.

Another student likened it to having a good lawyer:

It's like having […] so you have someone, you have a good lawyer, and you have very excellent lawyers, and the difference would be the other one can explore, or explore the system legally to defend the guy a different way. So it's the same way for accounting, so do we know different ways how to present the data to make this accrual accounting we were talking about. It's nothing illegal in it.

This is included as one of the learning outcomes in the unit and is regarded by the unit coordinator as an important threshold concept for students. MBA students are not

going to become accountants but it is important that as managers and users of financial statements they understand the concept of earnings management.

A third troublesome area identified by students was the use of terminology which made learning difficult and so was seen as a significant challenge according to the students as demonstrated by the following student comment:

> That brings me to my first accounting class in undergraduate, you had to balance assets and liabilities, and then debits and credits and trying to wrap your mind around that, and this increases that while decreasing the other and it all had to balance out. If you can't get that down first then it's really difficult from the bottom of the class.

Finally, the application and interpretation of ratios was regarded as an important and challenging capability by a number of students requiring the understanding of a number of threshold concepts as one student commented:

> Interpret a financial statement; you need to apply various threshold concepts to properly interpret them.

The analysis of financial statements is regarded by the unit coordinator as an important learning outcome for students and to be competent at this student's need to have a good understanding of the above three threshold concepts.

*5.2.2 Threshold capabilities.* Having considered the level of challenges experienced in the potential threshold concepts in the unit, students were then asked about how well the unit helped them develop the potential threshold capability, understanding accounting information. An analysis of the responses from both groups of students demonstrated that students felt strongly that the unit developed the capability to understand and read financial statements.

The following comments from three IMT students typify comments from nearly all students at the focus group:

> For me a threshold capability is being able to read everything, so now if we look at like depreciation, it does now make sense, or goodwill, and the whole thing makes a lot of sense to read it and it goes very quick.

> After taking the unit I was able to interpret the financial reports/statements and even able to compile ones myself.

> I can read and understand financial statements.

Students also spoke about the way the learning in the unit transformed the way they thought about how accounting is used and applied as illustrated by the following comment:

> A new way of thinking – tend to think in terms of cash accounting, accrual accounting is a new way of thinking about accounting.

*5.2.3 Barriers to attaining threshold concepts and capabilities in intensive-mode teaching.* In response to the question about what were barriers that hindered the development of the threshold concepts and capabilities, not many were identified by the IMT students.

The following five comments are the only barriers or hindrances identified:

> High volume of MBA work meant quite tired a lot of the time!

> Fast pace.

> Information overload.

Being left behind if we couldn't keep up with each other. Time-consuming chapters.

Too much detail and lack of time in a few areas which were, I guess, not required to be understood in detail in any way at that level.

This was the first time the MBA had been offered in an intensive mode at the university. In the second year more study breaks have been added to try and deal with the above comments which revolve around time pressures.

The following comment relates to the regular testing through the weekly quizzes or readiness assurance tests which were seen by many students as beneficial. It reflects the workload expectations for the full-time intensive MBA program:

Although preferable to do RATs after learning the content, studying for the RAT can distract from that week's readings.

*5.2.4 Factors that enhanced the attainment of threshold concepts and capabilities.* There were a number of factors identified during the focus group sessions.

One factor referred to by a number of students is the team exercise where students work in teams to analyze the financial performance and position of two actual listed companies. The exercise is an intensive activity and requires a full day for teams to complete the activity. As a result the flexible students have to attend on a Saturday for the full day. Hence, this is a modification to the normal structure of the flexible MBA unit to utilize what is a normal day for the IMT unit. Students in both cohorts commented on the benefit of the team exercise in helping them attain the threshold concept of understanding financial statements and the capability to analyze such statements. This involved actual financial statements of listed companies which as suggested by Boustedt (2010) requires students to apply concepts:

One key way we developed this capability was through a day long in-class exercise where we worked in groups to analyse 2 companies.

Full day team exercise, where we compared two financial statements.

Another factor cited as assisting in the attainment of threshold concepts and capabilities was the opportunity to ask questions in class as shown by the following comment from an IMT student:

I think because of intensive mode you have this long period of time together and […] you seem to have more time for students to ask questions, compared to the three-hour slot where they've just come in from work, some of them get there a bit late, they're clearly tired, they've been working all day. And you don't seem to have that same space […] for students to reflect and ask questions, which […] sounds counter-intuitive […] but actually is part of the reason why they're able to ask the questions. They've got longer to think about it because they've got more breaks.

Another item discussed by students in both cohorts as being helpful was the readiness assurance tests which are multiple choice quizzes used to assess how well students understand the assigned reading material. As described earlier, students complete the quiz individually and then retake the same quiz in teams:

In retrospect, but the way that the RATs we used was really, really helpful, because it's been […] it's said, but to make it explicit, they're designed to be readiness assurance tests that you do your reading at home, you're tested as soon as you come in, without having a lecturer etc. However in accounting it wasn't used that way and I think probably we all found it more helpful.

Another factor offered by both groups of students was the value of working in teams and learning from peers as reflected in the following student comment:

> Working with peers and learning from them is very beneficial

### 6. Implications and conclusions

A number of key implications and conclusions emerge from this research project. It further demonstrates the utility of the threshold concept and threshold capabilities framework in understanding student experiences of business education. Students undertaking the strategic management and accounting units in this study were able to identify a number of threshold concepts that were potentially troublesome, and upon which they could become stuck. Similarly, there was some evidence of the development of threshold capabilities in these cohorts. Further research could be undertaken across a range of discipline areas to further understand the utility of these frameworks to the design, delivery and assessment of the business curriculum.

In terms of course design, the findings of this study suggest that careful attention should be given to the scheduling of units. In the findings students completing intensive-mode units reported difficulty in balancing their study when undertaking multiple units – especially when studying intensive and more standard mode units at the same time. Similarly, the compression of content/activity into a shorter period of time potentially amplified the pressure of balancing work and family commitments. It is critical to the design of IMT units that clear advice is provided to students in advance about the importance of time management when undertaking such units, and that processes are in place to allow students who experience periods of absence from the program to withdraw from IMT units.

The findings also report that peer-based learning was an important factor in helping students in both units traverse the liminal space and develop an understanding of threshold concepts. Therefore, when developing a unit to be delivered in an intensive mode, instructors should consider the use of team-based activities and exercises. In the strategic management unit students engaged in online discussion boards regularly during the teaching period, allowing them the opportunity for ongoing discussion of concepts beyond the bounds of class time and to learn from the experiences of others in the unit.

Similarly, the accounting units employed a team-based learning approach where students learn from and with peers in their team. One of the important threshold capabilities for accounting students in the MBA is the ability to be able to analyze a set of financial statements. The findings showed that students found the team-based exercise where they were required to analyze the financial statements of two companies assisted them in traversing the liminal space and being comfortable with what was at the start of the unit a very challenging and troublesome task. While we are not able to test for any causal relationship it was possible to examine the performance of students in both the IMT and flexible modes completing a similar assignment on the financial analysis of two companies in class time in teams. For students completing accounting in the IMT unit the average score was 79 percent with a standard deviation of 1.4 percent compared to 71 percent with a standard deviation of 5.1 percent for students in the flexible unit. Given that both cohorts of students completed the exercise under similar conditions across a full day the difference in performance is a positive outcome for the IMT approach. This may at least partially be explained by the findings that the IMT students in accounting reported the opportunity for them to ask questions in class

and the opportunity to learn from peers were important factors that enhanced the attainment of threshold concepts and capabilities.

The peer aspect of curriculum design is likely to be important for a couple of reasons. First, in IMT units there is a compression of peer interaction in time – rather than interacting with peers for just a couple of hours per week as would be the case in a unit delivered in a standard mode, students studying in intensive mode spend greater periods of time together and often have less time between interactions (classes, team meetings, etc.). This intensity of interaction may help create a sense of communitas within the team, which enables them to embrace as a team their liminal state as learners. Second, each student comes to a unit with their own unique experiences and conceptions of business, which means when a student experiences a threshold concept they can more readily test their understanding of the concept against that of their peers. This exposes students to the idea that there are often many different ways in which a business concept can be understood, and different ways of thinking about the world of business.

The findings of this research also indicate the important role played by authentic learning and assessment tasks in helping students attain threshold concepts and develop threshold capabilities. In the strategic management unit students felt that working on a live case organization for their major assessment allowed them to better understand the application of strategic management theory to practice. Considerable class time was allocated to understanding the business and industry, and discussing the strategic context of the organization with key organizational stakeholders. Linking learning and assessment to the live case gave students an opportunity to develop threshold capabilities and to move to a post-liminal state of thinking line a strategist. In the accounting unit students analyzed the actual financial statements of two listed companies and used real time data for the analysis and to make recommendations.

An interesting finding from the study was the impact of culture and language on the attainment of threshold concepts. In the strategic management unit a number of international students identified that some concepts in the unit did not translate seamlessly into their linguistic or cultural frames of reference. Consistent with this realization, the thresholds framework recognizes that the experience of thresholds is dependent on pre-liminal variation in students' backgrounds – as many of the concepts in management-based business units are culturally bound it is likely that variation will exist between domestic and international cohorts. Given this, an interesting approach to curriculum design in units like strategic management may be to make these cultural differences a focus of learning early in the unit, allowing students to reflect on the different understandings of concepts like strategy, timeframes, resources and competition. This may better prepare all students for the global nature of modern business.

The theory suggests that supporting students to traverse the liminal space in an intensive-mode unit could be achieved by shortening the duration of the liminal space or by shifting the liminal space to an earlier time. The approaches that students reported as supporting them in overcoming the thresholds were consistent with achieving one or both of these goals. The following positive comment from one of the IMT accounting students provides support for the capacity of students to traverse the liminal space in a shortened period of time:

I found that by the end of the unit I was performing at a better level of "guidance".

In closing, there are two limitations with this study. First, the number of respondents in each unit was low but the 30 students from the intensive mode units represent a high proportion of enrolled students and a reasonable number for what is essentially a

qualitative study. Replicating this study over several offerings of these two units would help to identify if the threshold concepts and capabilities are consistent across cohorts, or if variance is experienced between cohorts. Second, this study looked at just two instances of units delivered in IMT. Further research is needed to explore different models of intensive mode delivery, and the manner in which they impact on attainment of threshold concepts and capabilities. In particular, attention should be given to "study-load" and IMT – how does the does the number of units studied simultaneously with/in an IMT unit impact on student attainment of thresholds?

## Notes

1. For more details go to www.tblcollaborative.org/

2. For more details go to www.epsteineducation.com/home/history/default.aspx

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