



Learning Environment and Approaches to Learning in China and Australia: A Tale of Three Accounting Cohorts

Riccardo Natoli¹, Tracey McDowall², Zi Wei³, and Beverley Jackling⁴

Abstract

The main purpose of this paper is to investigate whether learning approaches are impacted by the learning environment across two countries and three accounting student cohorts. This paper utilises a logistic regression based on responses from 1,381 students across five higher education (HE) institutions from China and Australia. The findings provide original empirical evidence of the Chinese accounting students' expectations of deep learning and show that student perceptions of good teaching is a key determinant to a deep approach to learning for all three student cohorts. In addition, clear goals and standards were significant for Chinese accounting students studying both in China and Australia, while appropriate workload was significant for deep learning for the Australian domestic student cohort. There are practical implications for instructors as the results show that instructors need to adjust their teaching accordingly along with adjusting expectations regarding student workload and assessments.

JEL: I21, M40

Keywords: Course experience, Learning environment, Approaches to learning, Accounting education, China, Australia

¹ Victoria University, Australia

² Deakin University, Victoria, Australia

³ Central University of Finance and Economics, Beijing, China

⁴ Victoria University, Melbourne

1. INTRODUCTION

Higher education (HE) institutions face a climate of increasing accountability due, in part, to the rapid expansion in the HE sector across the world⁵. This has led some to claim that broad variations in education quality among universities exist (Jiang, 2010; Lee, Huang & Zhong, 2012; Yin *et al.*, 2014). Consequently, according to Lee *et al.* (2012) HE institutions across many countries decided over a decade ago to adopt systems of quality assurance (e.g. UK via the formation of the Quality Assurance Agency for Higher Education; Australia via the Australian University Quality Agency). The quality of university learning and teaching is a topic of debate in China due to the rapid expansion and as a result quality assurance is a more recent phenomenon.

One part of this system of quality assurance involves HE institutions asking students to evaluate the classroom learning environment in their unit⁶. This approach has been employed throughout HE institutions across the western world and is viewed by university management as a means to improve teaching effectiveness⁷. To measure student perception of the learning environment, one of the most established instruments is the Course Experience Questionnaire (CEQ). According to Talukdar, Aspland and Datta (2013), the purpose of the CEQ (Ramsden, 1991; Wilson, Lizzio & Ramsden, 1997) is to focus on the learning environment that has been linked to deep and surface approaches to learning. Previously a component of the Australian Graduate Survey (AGS), the CEQ is administered in conjunction with Graduate Outcome Survey (GOS).

Deep and surface learning approaches have a long history in the education literature (Marton & Säljö, 1976a, 1976b), Pask (1976) Biggs (1987) Entwistle and Ramsden (1983), Entwistle (1991) and Schmeck (1988). Within accounting, ongoing concerns surround the quality of student learning in accounting, specifically the non-deep approach to learning adopted by the majority of accounting students (Mathews, Jackson & Brown, 1990; Eley, 1992; Bowen, Sefcik & Soderstrom, 1996; Booth, Lockett & Mladenovic, 1999; Albrecht & Sack, 2000; Hall *et al.*, 2004; Byrne, *et al.*, 2010; American Accounting Association, 2012). This issue has greater prominence within a Chinese context where it is claimed that classroom teaching in Chinese tertiary institutions is usually conducted within a teaching-centred manner where students follow the lecturers' instruction (Yin *et al.*, 2014; Gan *et al.*, 2019). This passive manner is akin to a surface learning approach. Consequently, a major challenge for accounting academics is to encourage students to adopt a deep learning approach, which is more likely to lead to high quality learning outcomes (Prosser, Walker & Millar, 1995; Biggs, 1999; Hazel, Prosser & Trigwell, 2002; Everaert, Opdecam & Maussen, 2017).

Despite the importance of the classroom learning environment and learning approaches, there has been, as Yin *et al.* (2014) assert, a significant amount of empirical research into student learning in Chinese universities in the international literature. There are also studies on international students' experiences and perceptions of learning in the Western learning environment (e.g., Campbell & Li, 2008; Wong, Cooper & Dellaportas, 2015). Moreover, studies comparing the manner in which Chinese students from a Chinese HE institution adopt learning approaches and perceive good teaching compared to Chinese students from a western HE institution are rare.

⁵ For instance, in China, gross enrolment from the student population increased from 5% in 1993 to 15% in 2002 and reached 30% in 2012. This totals to more than 33 million students in HE (Yin *et al.*, 2014).

⁶ In this instance, the term unit refers to a single subject of study in which a student enrolls and in which a grade or mark is recorded over the course of one semester.

⁷ Typically, these results are coupled with other measures to ensure a more holistic guide to teacher evaluation.

To address this gap, this paper will compare three accounting cohorts⁸ with respect to their perception of their learning environment and the learning approach being adopted. The three cohorts comprise: (i) Chinese accounting students studying in a Chinese HE institution; (ii) Chinese accounting students studying in an Australian HE institution; and (iii) Australian domestic accounting students studying in an Australian HE institution. Thus, this paper will initially identify the extent to which the three cohorts perceive aspects of the learning environment associated with their unit (via the CEQ) and see how this relates to the approach to learning style adopted by these students.

The most notable results showed that for Chinese students studying in China clarifying goals and standards was more important in influencing a deep approach to learning while for both cohorts in Australia, good teaching was more influential.

The main contribution of this paper is that the study extends the small amount of research on student learning approaches on Chinese students being taught in a Chinese educational institution (e.g., Gan *et al.*, 2019). In addition, the comparison of Chinese students from two different Chinese HE institutions to Chinese students studying in an overseas institution (i.e., Australia) also adds to the contribution.

The practical application arising from this paper provide insights that highlight how a one-size fits all method to encourage a deep approach to learning is not realistic. Specifically, instructors need to be aware of the issues which their student cohort face and adjust their teaching accordingly with respect to how they teach along with setting out clear goals and standards and adjusting expectations regarding student workload.

The following section briefly outlines the background to learning approaches, select student characteristics, and the course experience questionnaire used to measure teaching effectiveness and perceived academic quality. The research method is then described which includes an overview of the research instruments. The results are presented in the following section, while the final section presents a discussion of the findings, implications and directions for future research.

2. LITERATURE REVIEW

According to Zhang (2006), Chinese university students have a strong desire for teaching styles that encourage collaborative work. However, as Zhang, Xue, and Lu's (2013) work showed, Chinese university students are not keen to engage with their instructor during classroom teaching. A repeated finding by researchers is the teacher-centered pedagogies are usually predominant in Chinese universities (Leung, Lu, Chen & Lu, 2008; Yin, González & Huang, 2018; Gan *et al.*, 2019). As Zhen (2007) points out, classrooms in China are dominated by the lecturers' instruction and students are not encouraged to ask questions freely. In fact, Yin, González and Huang (2018) assert that Chinese students usually participate in the classroom teaching in a quite passive manner. This is consistent with Yin's *et al.* (2016) observation that university teaching in China has been characterised by teacher centeredness and a lack of cultivation of students' independence for a long time.

The consensus in the accounting education literature is that the teaching style is more effective when it is student-centred rather than teacher-centred (Bobe & Cooper, 2018). This is supported by Wygal, Watty and Stout (2014) who studied the attributes of effective teaching from the teachers' perspective based on the views of 22-award winning accounting educators at Australian Universities, who are known as teaching exemplars found that one of the top five drivers of effective teaching were having a student focus teaching approach. These perceived

⁸ The terms 'cohorts' and 'groups' are used interchangeably throughout this paper.

differences in approach to teaching style acts as a basis for comparison to student perceptions of the unit as well as their learning approach. Not surprisingly, the issue of the classroom learning environment and learning approaches are a primary concern for all HE institutions across the world.

2.1 Learning environment and approaches to learning

As stated previously, student evaluations of the learning environment have been employed throughout HE institutions across the world for decades, with the most established instrument for this being the CEQ. Although different CEQ versions exist, Richardson's (2005) review suggested that the CEQ, in general, was a reliable and valid instrument for gathering students' perceptions of teaching effectiveness and academic quality (Ramsden, 1991; Trigwell & Prosser, 1991; Richardson, 1994; Wilson *et al.*, 1997; Lizzio, Wilson & Simmons, 2002; Byrne & Flood, 2003; Law & Meyer, 2011). The CEQ has been widely used in studies of students' perceptions of the learning context and to evaluate teaching effectiveness in HE institutions in many countries including the UK (Richardson, 2005), Canada (Kreber, 2003), Australia (Trigwell & Prosser, 1991; Wilson, Lizzio & Ramsden, 1997) and Chile (Marchant, Fauré & Abricot, 2016; Marchant, González & Fauré, 2018). The CEQ has also been used more recently in non-Western countries such as Pakistan (Ullah, Richardson & Hafeez, 2011), Japan (Fryer, Ginns, Walker & Nakao, 2012), Hong Kong (Law & Meyer, 2011) and mainland China (Yin *et al.*, 2016; Yin *et al.*, 2018). In addition, Yin *et al.* (2016, 2018), assert that confirmatory factor found that the CEQ data could fit to the intended six scales in different Chinese samples⁹.

The 25-item CEQ version comprises five scale dimensions including, good teaching (6 items), clear goals and standards (5 items), appropriate workload (4 items), appropriate assessment (3 items), and generic skills (6 items) as well as a single item addressing overall satisfaction with the quality of the course (McInnis *et al.*, 2001). Importantly for this study, Talukdar *et al.* (2013) stated that the purpose of the CEQ (Ramsden, 1991; Wilson *et al.*, 1997) was to focus on the classroom teaching environment that has been linked to deep and surface approaches to learning (McInnis, 1997; Chalmers, 2008). It is also used to facilitate quality assurance and accountability (Griffin *et al.*, 2003) and to assist institutions with their quality enhancement and continuous improvement processes (Griffin *et al.*, 2003; Harris & James, 2006, 2010; DEEWR, 2009). Of the five main CEQ scales, the generic skills scale is not explicitly linked to learning approaches (Chalmers, 2008) nor is the single overall satisfaction item and hence are omitted from this study.

According to Biggs (1989), approaches to learning consist of two dimensions, namely, a congruent motive and a corresponding study strategy. The former explains why the student wants to approach a specific learning task while the latter shows how the student approaches the learning task. The literature in this area consistently shows that students tend to approach their learning in two ways: deep and surface approaches.

Biggs (1987), describes the deep approach as a personal commitment to learning and an interest in the subject, while a surface approach is one where by students reproduce the material being studied through memorisation or the use of routine procedures (Biggs, 1989; Kember, Biggs & Leung, 2004). This approach aims at avoiding failure but with investing minimum effort (Everaert *et al.*, 2017).

Studies by Prosser, Walker and Millar (1995), Biggs (1999), Hazel, Prosser and Trigwell (2002), Everaert *et al.* (2017), Guo, Yang and Shi (2017) and Dong *et al.* (2019) show that a deep learning approach leads to improved learning outcomes for students. The

⁹ In Australia, the CEQ continues to be administered as part of the Graduate Outcome Survey.

findings of Bobe and Cooper (2019) is consistent with previous accounting studies (Booth, Luckett & Mladenovic, 1999; and Byrne, Flood & Willis, 1999) who found that a deep or achieving approach is positively associated with high academic outcomes.

However, Lucas (2001) for the learning of basic techniques. Further, studies such as Hall, Ramsay and Raven (2004), acknowledges that a surface approach may be appropriate Davidson (2002), Bowen *et al.* (1996), Chan *et al.* (1989) demonstrated that accounting students favoured a surface approach, while other studies such as Sharma (1997) and Byrne *et al.* (1999) showed no preference for any one approach. A more recent study undertaken by Byrne *et al.* (2010) demonstrated that accounting students favour a strategic approach. Byrne added that students adopted the learning approach that would maximise their chance of achieving a high mark. Thus, learning approaches would reflect individual unit assessment criteria. Consequently, students can alter their learning approach based on the teaching instructions they receive.

From a Chinese context, there is debate about the influence of Confucianism on teaching instruction. Education is said to be deeply embedded within the Confucian cultural mindset, with the nature of Confucian teachings on society and education, placing an emphasis on obedience to parents, teachers and elders. (Dennehy, 2015). It is claimed that students tend to see the teacher as a 'guru' and try to internalise unquestioned knowledge handed down by teachers through rote learning and memorisation (Hofstede & Hofstede, 2001; Lee & Carrasquillo, 2006; Manikutty *et al.*, 2007). Thus, as Tait (2010) argues, Chinese students sometimes adopt a memorisation strategy in order to compensate for a lack of language skills – they understand the material but fail to express themselves in their own words and memorise sentences to achieve the desired standard in examinations. However, Biggs (1996) and Kember (1996, 2000) felt that Chinese students were deep learners while Wong (2004) asserts that most western academics continue to believe that Asian learners adopt a rote-learning strategy¹⁰.

As the studies above have demonstrated, whether it be students adopting a strategic outlook or the nature of their classroom learning environment, approaches to learning do not occur in a vacuum.

2.2 Student characteristics

The variable, gender, has produced mixed results regarding its impact on learning approaches as evidenced by the following studies by Booth, Luckett and Mladenovic (1999), Lastusaari and Murtonen (2013), Wilson, Smart and Watson (1996), Richardson and King (1998) and Beng and Tailman (2019). From a Chinese perspective, Yin *et al.* (2014) found that males were more likely to adopt a deep learning approach compared to women. Meanwhile, studies by Zeegers (2001), Gremler (2003) Baeten, Kyndt, Struyven and Dochy (2010), Diseth, Pallesen, Brunborg and Larsen (2010) and Leiva-Brondo *et al.* (2020) have examined the link between age and learning approaches. According to Lake and Boyd (2015), the causal factor of age on the adoption of learning approaches needs to be investigated. With respect to year of study, McDonald *et al.* (2017) and Brown and Murdolo (2016) identified differences in learning approaches between year levels.

In summary, based on the literature review, this study examines whether learning approaches are impacted by the learning environment as represented by the CEQ across three cohorts. This leads to the following research questions for this study to address:

¹⁰ Obviously, not all western academics hold this view. Exceptions include, but are not limited to: Marton, Alba and Kun (1996) and Kirby *et al.* (1996).

RQ1: Which learning environment factors, as measured by the CEQ, are likely to be associated with a deep approach to learning of accounting students among the three cohorts?

RQ2: Which student characteristics are likely to be associated with a deep approach to learning of accounting students among the three cohorts?

3. RESEARCH METHOD

3.1 Sample selection and data collection

After receiving ethics approval, the survey instrument was administered during 2014-2015, across two different higher education providers located in Beijing and three in Melbourne, Australia. Specifically, there are three study groups of interest:

- i. Chinese students studying in China (also referred to as 'China' cohort).
- ii. Chinese students studying in Australia, which consists of students who indicated that they are international students and their country of permanent residence is China (also referred to as 'China-Australia' cohort).
- iii. Australian domestic students who indicated that they are not international students (also referred to as 'Australia' cohort).

The surveys were distributed to students as they entered the classroom. The researchers spent five minutes explaining the nature and purpose of the research. Students were advised that completion of the survey was voluntary with a central location point provided for students to hand in their completed survey. In all, approximately 1,600 accounting students received the surveys, of which 1,381 were usable, including 618 Chinese students studying in China, 422 Chinese students studying in Australia and 341 Australian students studying in Australia. This led to an approximate response rate of 86.3 per cent. The dataset, which was collected over the period of 2014-2015, has currency since it provides original empirical evidence of the Chinese accounting students' perceptions to learning in both China and an overseas destination where existing studies are limited

3.2 Survey Instrument

The questionnaire consisted of a series of demographic questions including items such as gender, age and education details. The quantitative data consisted of a survey containing two instruments which are employed in this study. The first instrument was the CEQ which was adapted from Ramsden's (1991) development of the CEQ. The instrument measured four aspects of the learning environment: good teaching (six items), clear of goals and standards (four items), appropriate assessment (three items) and appropriate workload (four items). For each item, the participants were asked to indicate their level of agreement or disagreement with the relevant statement using a five-point Likert scale from 1 for 'strongly disagree' to 5 for 'strongly agree'. Statements were reverse coded where necessary as evidenced in Appendix Table A1

The second instrument used was Biggs' Revised Study Process Questionnaire (RSPQ-2F)¹¹. This instrument is designed to assess tertiary students' use of different approaches to learning. According to Biggs, Kember and Leung (2001), the RSPQ-2F is a 20 item questionnaire that provides scores on two basic motives for learning scales and two learning strategy scales¹². Each item is a statement regarding either a learning motive or a learning strategy. As seen in Appendix Table A2, The items in the questionnaire combine to give scores

¹¹ The RSPQ-2F is referred to as SPQ in the remainder of the paper.

¹² Biggs *et al.* (2001) reported Cronbach's alpha coefficients of 0.73 and 0.64 for the deep approach and the surface approach scales respectively. They also reported that the instrument had good construct validity.

for four-subcales: (i) deep motive; (ii) deep strategy; (iii) surface motive; and (iv) surface strategy. Items are rated on a five point Likert scale ranging from 1 (this item is never or only rarely true of me) to 5 (this item is always or almost true of me).

According to Stes *et al.* (2012), the construct validity and reliability of the RSPQ-2F has demonstrated good results since Biggs *et al.* (2001) initial assessment of it. To maintain the reliability and validity of the instrument, statements were reverse coded where necessary. For the purposes of addressing research questions one and two, the dependent variable is formed via the RSPQ-2F instrument.

3.3 Descriptive Statistics

The descriptive statistics of this study is presented in Table 1 while Table 2 contains the Cronbach alphas for the study variables.

Table 1: Descriptive Statistics

	China		China-Australia		Australia	
	Frequency	%	Frequency	%	Frequency	%
Learning Approach						
Non-deep Approach	579	93.7	374	88.6	286	83.9
Deep Approach	39	6.3	48	11.4	55	16.1
Course Experience*						
<i>Good Teaching (GT)</i>						
Yes	110	17.8	103	24.4	77	22.6
No	508	82.2	319	75.6	264	77.4
<i>Appropriate Workload (AW)</i>						
Yes	47	7.6	64	15.2	35	10.3
No	571	92.4	358	84.8	306	89.7
<i>Appropriate Assessment (AA)</i>						
Yes	58	9.4	84	19.9	25	7.3
No	560	90.6	338	80.1	316	92.7
<i>Clear Goals & Standards (CGS)</i>						
Yes	60	9.7	53	12.6	48	14.1
No	558	90.3	369	87.4	293	85.9
Gender						
Female	478	77.4	293	69.4	170	49.9
Male	140	22.6	129	30.6	171	50.1
Age						
Under 20 years old	109	17.6	38	9.0	132	38.8
20 years old and over	509	82.4	384	91.0	209	61.2
Year of Study						
Year One	14	2.3	155	36.8	150	43.9
Above year one	604	97.7	267	63.2	191	56.1

Note: N=1,381; *All course experience type discrete variables were assigned binary properties for ease of interpretation in the table above.

The student characteristics in Table 1 are in line with the student enrolment numbers in the accounting course of the two Chinese and three Australian higher education providers with respect to age and gender. In addition, students who adopted a deep approach to learning were expectedly small ranging from 6.3% to 16.1%. The results show that respondents identified low learning environment levels via good teaching (17.8% to 24.4%), appropriate workload (7.6% to 15.2%), appropriate assessment (7.3% to 19.9%) and clear goals or standards (9.7% to 14.1%). These results are an early indicator that instructors have room to improve the

learning environment. Table 2 below shows that the Cronbach alphas for the three student cohorts ranged from high to moderate reliability¹³.

Table 2: Cronbach alphas

	China	China-Australia	Australia
GT	0.737	0.809	0.864
AW	0.480	0.555	0.745
AA	0.517	0.680	0.697
CGS	0.525	0.574	0.698
DA	0.844	0.794	0.849

3.4 Data Analysis

The main purpose of the study is to determine accounting students' perceptions of the learning environments impact upon their deep approach to learning across three student cohorts. To achieve this goal, a logistic model was developed for the study where the variable deep approach serves as the dependent variable and the four CEQ factors and three student characteristics serve as independent variables. A deep approach to learning was defined as an A score of four and above on the composite deep approach construct represents deep learning via Biggs' RSPQ-2F. A score below four was deemed as a non-deep approach¹⁴. The *logistic* model can be expressed as:

$$F(Z_i) = \frac{1}{1+e^{-Z_i}} \quad (1)$$

Where, e is the base of the natural logarithm. In the logistic model P_i , which is the probability of the i^{th} student adopting a deep approach to learning, is expressed as a function of Z_i . The function Z is estimated via the method of maximum likelihood and is then substituted in the logistic model. The transformed logistic model can be expressed as:

$$\ln \left[\frac{P_i}{1-P_i} \right] = Z_i = \alpha + \beta X_i \quad (2)$$

Where, the dependent variable is the logarithm of the odds that a particular choice will be made, which in this study is the student's decision to adopt a particular approach to learning. Thus, the dependent variable for the logistic regression took the value of '0' for a non-deep approach and '1' for a deep approach. For a binary dependent variable, a logistic regression is an appropriate modelling choice. To ensure the robustness of the results, students who achieved simultaneously high scores in both deep and surface approaches were omitted (see: Bowden, Abhayawansa and Manzin, 2015).

The relationship between the learning environment, student characteristics and deep approach to learning are estimated using three dependent variables: (i) DA China, (ii) DA China-Australia and (iii) DA Australia. The three deep approach to learning (DA) variables can be

¹³ The item 'It was often hard to discover what was expected of me in this unit' was removed to improve the reliability score for the CGS scale while item 'I was generally given enough time to understand the things I had to learn' was removed to improve the reliability score for the AW scale.

¹⁴ This demarcation approach has been used in prior studies such as McDowall *et al.* (2015).

written as a function of the learning environment and student characteristic variables. The following estimation was constructed¹⁵:

$$Z = \beta_0 + \beta_1 * \text{Good Teaching} + \beta_2 * \text{Appropriate Workload} + \beta_3 * \text{Appropriate Assessment} + \beta_4 * \text{Clear Goals and Standards} + \beta_5 * \text{Gender} + \beta_6 * \text{Age} + \beta_7 * \text{Year of Study}$$

Where:

$Z(x)$ is the logistic function with binary values to be estimated by the explanatory variables;

β_i 's are the parameters of these variables;

Good Teaching [GT]: (discrete variable);

Appropriate Workload [AW]: (discrete variable);

Appropriate Assessment [AA]: (discrete variable);

Clear Goals and Standards [CGS]: (discrete variable);

Gender: 0 = Female; 1 = Male;

Age: 0 = Under 20 years old; 1 = 20 years old and over.

Year of Study: 0 = First year; 1 = Other

4. RESULTS AND DISCUSSION

As Table 3 shows the estimated equations for the study time period had a high level of significance ($p < 0.001$) for the logistic models. Moreover, when combined the three goodness of fit measures: (i) Hosmer and Lemeshow Test; (ii) Nagelkerke R-square; and (iii) overall prediction accuracy are considered acceptable. Considering these statistics collectively it is concluded that the model fits the data.

Table 3: Test statistics for the estimated equation

Measure	Statistic	DAC Value	DAC-A Value	DAA Value
Significance of Estimated equation	<i>p</i> -value	<0.001	<0.001	<0.001
Goodness-of-fit:				
(i) Nagelkerke R ²		0.233	0.310	0.339
(ii) Hosmer-Lemeshow test	<i>p</i> -value	0.709	0.939	0.001
Prediction accuracy		97.2%	89.7%	84.8%

The results of the logistic model are shown in Table 4 below.

Table 4: Estimation Results

Explanatory Variables	DA: China	DA: Ch-OZ	DA: Aust
Constant	-15.704*** (0.000)	-14.404*** (0.000)	-8.520*** (0.000)
Good Teaching [GT]	1.682*** (5.375)	1.459*** (4.303)	1.556*** (4.739)
Appropriate Workload [AW]	-0.302 (0.739)	0.164 (1.178)	0.905*** (2.471)
Appropriate Assessment [AA]	-0.297 (0.743)	0.210 (1.234)	-0.272 (0.762)
Clear Goals & Standards [CGS]	2.204*** (9.065)	1.015* (2.760)	-0.279 (0.756)
Gender	-0.331	0.225	-0.696**

¹⁵ The three estimations substitute DA for the three dependent variables: DA China, DA China-Australia and DA Australia.

	(0.718)	(1.252)	(0.499)
Age	-0.238	1.959*	1.004*
	(0.788)	(7.094)	(2.729)
Year of Study	0.485	-0.120	0.615
	(1.624)	(0.887)	(1.849)

Notes: Figures in parentheses are Exp(B) statistics. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

4.1 Relative importance of the explanatory variables

With respect to research question one, the CEQ variable *good teaching* (GT) was the only variable to impact a deep approach to learning for all three student cohorts. Specifically, the results show that the likelihood of a Chinese accounting student who perceives good teaching in accounting adopts a deep approach to learning is 5.375 times larger than the odds for a Chinese accounting student who does not perceive good teaching in accounting. For Australian domestic students it was 4.739 times larger and 4.303 times larger for Chinese students studying in Australia. Thus, the positive influence GT had on a DA to learning occurs for all three cohorts.

The results support prior studies such as Crawford *et al.* (1998), Kreber (2003), Lizzio, Wilson, and Simons (2002), Ramsden (1991), Wilson, Lizzio, and Ramsden (1997) and Belaineh (2017). The findings for China is in contrast to Yin *et al.*'s (2014) study which found a link between good teaching and surface approach but supports the study of Natoli *et al.* (2019) which found that good teaching increased a student's deep approach to learning. Not surprisingly, the results reinforce the importance of good teaching in facilitating a DA to learning.

The CEQ variable *clear goals and standards* (CGS) was positively related to DA among Chinese students studying in China and Chinese students studying in Australia but not for the Australian domestic student cohort. Specifically, the likelihood of a Chinese accounting student in China who is clear about the goals and standards in an accounting course adopting a deep approach to learning is 9.065 times larger than the odds for a Chinese accounting student who is not clear about the goals and standards in an accounting course. For Chinese students studying in Australia the likelihood of adopting a deep approach when students are clear about goals and standards is 2.760 times more likely. This result supports previous studies (Lizzio, Wilson, and Simons 2002; Wilson, Lizzio, and Ramsden 1997) where students whose instructors are perceived to provide clear teaching objectives for their students to help develop a deep learning approach.

The appropriate workload (AW) is positively related to DA for the Australian cohort only and is not significant for Chinese students studying in China as well as in Australia. Specifically, the results show that the likelihood of an Australian domestic accounting student who perceives an appropriate workload in accounting is 2.471 times more likely to adopt a deep approach to learning than an Australian domestic student who does not perceive an appropriate workload in accounting. The results seem to contradict the findings from previous studies which showed that a heavy workload were not related to a deep approach to learning (e.g. Lizzio, Wilson, and Simons 2002; Wilson, Lizzio, and Ramsden 1997). It also reinforces the unclear role of workload in student learning which has also been revealed by other studies

(Yin *et al.*, 2014). Thus, simply adjusting a student's workload in isolation and expecting an improvement to their DA to learning is not advisable for all student cohorts.

In addressing research question two, the variable *gender* was significant. Specifically, the results suggest that males are 0.499 times less likely to adopt a deep approach to learning than females. The result adds to the mixed findings found in prior studies such as Yin *et al.*'s (2014) and Lastusaari and Murtonen's (2013) Booth, Luckett and Mladenovic (1999), Lastusaari and Murtonen (2013), Wilson, Smart and Watson (1996).

With respect to the variable *year of study*, the results showed that the two cohorts studying in Australia were significant. Specifically, the results suggest that Chinese students not in their first year of study and studying in Australia are 7.094 times more likely to adopt a deep approach to learning than those in their first year. For the Australian domestic student cohort, students not in their first year of study were 2.7269 times more likely to adopt a deep approach to learning than those in their first year. The differences in learning approaches between year levels supports the findings by Brown and Murdolo (2016) and McDonald *et al.* (2017).

Overall, the results show that student perceptions of good teaching is a key determinant to a deep approach to learning for all three student cohorts. In addition, clear goals and standards were significant for Chinese students studying both in China and Australia, while appropriate workload was significant for deep learning for Australian domestic student cohort. The implications of the results for accounting educators are elaborated upon in the next section.

5. CONCLUSIONS

The main purpose of this paper is to investigate whether learning approaches are impacted by the learning environment as represented by the course experience questionnaire (CEQ) for the following three student cohorts: (i) Chinese students studying in China; (ii) Chinese students studying in Australia; and (iii) Australian students studying in Australia. The findings from this study will extend current knowledge of Chinese students' learning approaches.

There are practical implications for instructors as the results show that a one-size fits all approach to encourage a deep approach to learning. Hence, instructors need to be aware of the issues which their student cohort face and adjust their teaching accordingly with respect to how they teach along with adjusting expectations regarding student workload and assessments.

For instance, the results of the logistic model showed that an increase in good teaching facilitated students' deep approach to learning across all three student cohorts. Since the vast majority of students do not seem to adopt a deep approach to learning, the results suggest that instructors should have a higher concentration on how they can improve their teaching method to facilitate a deep approach for students.

Since clear goals and standards was shown to significantly and positively impact the deep approach to learning from Chinese students studying in China and Australia, the results suggest that instructors need to provide clear learning objectives and expected standards for their students. This would reduce ambiguity regarding unit expectations and impact upon the learning approach adopted. For the Australian domestic cohort, the CEQ variable, appropriate workload, was positive and significant. This suggests that more attention should be paid to the workload for Chinese cohort as it impedes their adoption of a deep approach to learning.

In addition, the non-significant result for appropriate assessments suggest that instructors are urged to design appropriate assessment tasks, with clear criteria and effective

feedback for student learning, which focus on students' mastery and understanding of knowledge in order to facilitate a deeper approach to learning.

Although five higher education institutions were included in this study, the findings from this study are not necessarily generalisable to all accounting degrees across China and Australia. Another limitation is the cross-sectional nature of the data. Hence, one area of future research could be to use a longitudinal research design, while another could be to include a qualitative analysis to provide a more in-depth analysis.

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APPENDIX

Table A1: CEQ questions asked in student survey

The teaching staff of this unit motivated me to do my best work	Good Teaching (GT)
The staff in this accounting unit put a lot of time into commenting on my work	
The staff made a real effort to understand difficulties I might be having with my work in this accounting unit	
The teaching staff in this unit normally gave me helpful feedback on how I was going	
My lecturers in this unit were extremely good at explaining things	
The teaching staff worked hard to make this unit interesting	Clear Goals and Standards (CGS)
It was always easy to know the standard of work expected in this unit	
I usually had a clear idea of where I was going and what was expected of me in this unit	
The staff in this unit made it clear right from the start what they expected from students	
It was often hard to discover what was expected of me in this unit (R)	Appropriate Assessment (AA)
To do well in this unit all you really needed was a good memory (R)	
The staff seemed more interested in testing what I had memorised than what I had understood (R)	
Too many staff in this unit asked me questions just about facts (R)	

I was generally given enough time to understand the things I had to learn	Appropriate Workload (AW)
The workload was too heavy in this unit (R)	
There was a lot of pressure on me as a student in this unit (R)	
The sheer volume of work to be got through in this unit meant that it couldn't all be thoroughly comprehended (R)	

Note: (R) indicates a reverse coded item.

Table A2: SPQ questions asked in student survey

I find that at times studying this unit gives me a feeling of deep personal satisfaction	Deep Motive (DM)
I feel that virtually any topic in accounting can be highly interesting once I get into it	
I find that studying accounting topics can at times be as exciting as a good novel or movie	
I work hard in this unit because I find the material interesting	
I come to most accounting classes with questions in mind that I want answering	Deep Strategy (DS)
I make a point of looking at most of the suggested readings that go with the lectures.	
I find the study of accounting standards interesting and often spend extra time trying to obtain more information about it	
I test myself on important accounting topics until I understand them completely	
I spend a lot of my free time finding out more about interesting accounting topics which have been discussed in different classes	Surface Motive (SM)
I find that I have to do a lot of work so that I can be satisfied that I understand the accounting topic (e.g. accounting standards)	
My aim is to pass this accounting unit while doing as little work as possible	
I do not find the study of accounting standards very interesting so I keep my work on this topic to a minimum	
I find I can get by in most assessments by memorising key sections rather than trying to understand them	Surface Strategy (SS)
I find it is not helpful to study accounting topics in depth when all you need is a passing acquaintance with topics	
I see no point of learning material which is not likely to be in the examination	
I only study accounting standards seriously from what is given out in class or in the course outlines	
I learn some things by rote, going over and over them until I know them by heart even if I do not understand them	Surface Strategy (SS)
I generally restrict my study to what is specifically set as I think it is unnecessary to do anything extra	
I believe that lecturers should not expect students to spend significant amounts of time studying material everyone knows won't be examined	
I find the best way to pass accounting examinations is to try to remember answers to possible questions	