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Teaching IFRS: Evidence from course experience and approaches to learning in China

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Structured Abstract:

Purpose – The introduction of International Financial Reporting Standards (IFRS) has brought about renewed calls for the learning environment to foster a deep approach to learning by students. Given this, the main purpose of this paper is to determine what aspects of the learning environment, as measured by the Course Experiences Questionnaire (CEQ), created in two semester-long financial accounting classes influences students' approaches to learning, as perceived by Chinese accounting students.

Design/methodology/approach – A logistic regression model based on responses from 497 accounting students across two universities in China is employed to address this issue.

Findings – The findings provide original empirical evidence of the Chinese accounting students' expectations of deep learning. The main results showed that teaching quality and clear goals and standards were significantly associated with a deep approach to learning.

Research limitations/implications – Since two universities are included in the study, the findings are not necessarily generalisable to all accounting degree courses across China. There are practical implications for the teaching of IFRS in the financial accounting unit in China, and particularly for the two universities. Specifically, instructors need to foster students' learning environment and inspire an enhanced approach to deep learning by focusing more on communicating their expected academic standards and improving their quality of teaching to reverse the passive approach taken by the vast majority of Chinese accounting students.

Originality/value – As one of the few studies from a Chinese accounting classroom context with respect to learning approaches to teaching IFRS, this study will contribute to extend the existing knowledge of the learning environment of Chinese universities.

Keywords financial accounting, learning approaches, course experience

Paper type Research paper

1. Introduction

In 2007, China converged their national accounting standards with the International Financial Reporting Standards (IFRS) as the main part of their accounting procedures (DeFond *et al.* 2019). The move towards IFRS in China was seen at the time as a monumental shift in financial reporting as educators and practitioners needed to replace their accustomed Chinese Accounting Standards (CAS) with a new reporting regime. As DeFond *et al.* (2019) point out, this transition meant that China, along with other countries that adopted IFRS, had to adopt the International Accounting Standards Board's (IASB's) Conceptual Framework for Financial Reporting.

From an accounting education perspective, the IFRS convergence meant that the conceptual framework utilised by IFRS, which explains what accounting practices should be or ought to be, provided the basis of principles-based accounting standards (IASB 2012). With respect to the potential impact for accounting students, as Wells (2011a) states, it is essential that students are taught in a manner which develops their judgment skills. This involves the creation of a learning environment that teaches principles-based standards (Wells 2011a; IASB 2012; Jackling *et al.* 2012), which is reflective of a deep approach to learning. However, within accounting, ongoing concerns surround the non-deep approach to learning adopted by accounting students (Byrne *et al.* 2010; Pathways Commission on Accounting Higher Education 2012).

From a Chinese context, this concern is greater given that classroom teaching in Chinese tertiary institutions is usually conducted within a teaching-centred approach (Yin *et al.* 2014; Shi 1990). Consequently, as Yin *et al.* (2014), Wu (2004), and Leng (1996) point out, Chinese students usually participate in a passive manner akin to a surface learning approach. Yin *et al.* (2014) add that there has been a significant dearth of empirical research into student

learning in Chinese universities in the international literature, where the perspective of students' learning experiences are scarce.

Hence, given that: (i) a deep learning approach is seen to be conducive to effectively teaching financial accounting due to the nature of IFRS (Jackling *et al.* 2013); and (ii) teaching quality in China is perceived to force students into adopting a non-deep approach to learning (Yin *et al.* 2014), this paper examines aspects of the learning environment, as measured by the Course Experiences Questionnaire (CEQ), to see which factors are perceived by Chinese accounting students' as influencing their approach to learning. The findings provide original empirical evidence of the Chinese accounting students' expectations of deep learning. This contributes to the literature by extending the existing knowledge of the learning environment of Chinese universities which, as Yin *et al.* (2014) state, remains scarce.

The most notable results showed that the vast majority of Chinese accounting students did not adopt a deep learning approach when learning a financial accounting unit. However, of those that did, the key learning environment factors were teaching quality and clear goals and standards. The practical application arising from this paper provide insights to accounting educators with respect to fostering a student learning environment to facilitate deep learning. This is achieved by: (a) identifying the main influences on the type of learning approach adopted by financial accounting students within China; and (b) providing suggested revisions to curriculum in order to facilitate a deep learning approach for accounting students in order to better comprehend IFRS.

The following section briefly outlines the background to the learning environment as measured by the CEQ along with learning approaches, and select student characteristics. 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

2.1 Teaching quality

According to Zhen (2007) and Zhang, Xue and Lu (2013), classrooms in China typically employ a teacher-centred approach where students do not actively engage with their instructor during classroom teaching. In contrast, university teaching in countries such as the USA are characterised by a student-centred approach where students are assumed to have a strong knowledge base before entering the classrooms (Yin *et al.* 2014). Based on this comparison, Ye (2011) summarised some of the weaknesses of China's university teaching as an over reliance of a teacher-centred approach and a lack of innovative teaching methods. Such weaknesses have led to concerns about teaching quality.

The issue of teaching quality is a primary concern for all higher education (HE) institutions across the world. As Yin *et al.* (2014) posited, in order to improve this, various nations have adopted 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 rapid expansion in China's HE system has meant that quality assurance is a more recent phenomenon¹. For instance, the Ministry of Education in China instituted a series of five-year cycles of undergraduate teaching evaluation, where the first cycle (2003-2007) covered 589 universities and colleges. However, as Lee *at al.* (2012) point out, the measures used by the Ministry of Education did not provide insight into the real quality of teaching and learning. Consequently, Liu (2013) asserts that future evaluations should continue to focus on the quality of teaching.

2.2 Learning environment and approaches to learning

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 the

learning environment (Ramsden 1991; Wilson *et al.* 1997; Byrne and Flood 2003; Law and Meyer 2011; Lizzio, Wilson and Simmons 2002). As Belaineh (2017) points out, the learning environment comprises: (i) student perception of an instructor's effort and commitment to their teaching (i.e., teaching quality); (ii) providing students with clarity regarding learning objectives and expected work standards (i.e., clear goals and standards); (iii) the extent to which assessments depend on memorisation (i.e., appropriate assessment); and (iv) the degree to which students felt the workload was excessive (i.e., appropriate workload).

As Entwistle and Ramsden (1983) and Entwistle and Tait (1990) reported, students' perceptions of their learning environments have a significant influence on their approaches to learning. This notion has been supported by numerous studies such as Yuen-Lee and Watkins (1994); Meyer and Muller (1990); Dart *et al.* (1998) and Ramsden (1991). More specifically, Lizzio *et al.* (2002) and Duff and McKinstry (2007) showed that teaching quality, clear goals and standards and appropriate assessment were significant to a student's deep approach to learning while workload was significantly associated with a surface approach, with the latter finding supported by Kember and Leung (1998) and Duff and McKinstry (2007).

In the educational literature, students' approaches to learning is perceived as one of the most influential concepts in the research into teaching and learning in HE (see: Biggs 1987; Entwistle and Ramsden 1983; Entwistle 1991). As Kreber (2003) points out, a deep approach to learning is characterised by a motivation to seek meaning, understand underlying principles and identify relationships between ideas or concepts. Conversely, a surface approach is characterised by students' intention to reproduce the material being studied (the motive dimension) through memorisation or the use of routine procedures (the strategy dimension) (Biggs 1989; Kember, Biggs and Leung 2004).

Studies by Hazel, Prosser and Trigwell (2002), Prosser, Walker and Millar (1995) and Biggs (1999) demonstrated that high quality learning outcomes can be achieved more readily

when students adopt a deep approach to learning. This learning approach aligns with Wells' (2011b) claim that the key to teaching an IFRS-based financial accounting unit requires a learning environment that fosters a deep approach to learning, which is best achieved via a framework-based approach.

Yet in previous accounting studies of learning approaches, the results have been inconclusive. According to Davidson (2002), accounting students favoured a surface approach while other studies such as Sharma (1997) and Byrne *et al.* (2010) showed mixed results. From a Chinese context, learning is very much influenced by Confucianism (Biggs and Watkins 1996), which is dominated by rote learning (i.e., memorisation and reproduction of facts) and the application of examples due to the demands of the assessment system (Sit 2013; Yin *et al.* 2014). According to Chan (1999), although memorisation is a significant strategy of learning in the Confucian tradition, it should not be equated with rote learning.

This led to scholars to distinguish between rote and repetitive learning. Rote learning was generally described as learning without understanding, whereas repetitive learning was the intention to understand its meaning. Although Biggs (1996) and Kember (1996, 2000) felt that Chinese students were deep learners, according to Wong (2004) most western academics continue to believe that Asian learners used the rote-learning strategy due to their practice of memorisation, which did not enhance their understandingⁱⁱ. Yet, despite this, Chinese students achieve considerably higher academic grades than their Western counterparts, especially in mathematics and science (Mehdizadeh and Scott 2005)ⁱⁱⁱ. The aforementioned studies highlight that approaches to learning do not occur in a vacuum.

2.3 Student characteristics

With respect to learning approaches, previous studies that have focused on gender differences have produced mixed results (Booth, Lockett, and Mladenovic 1999; Lastusaari and Murtonen

2013; Wilson, Smart and Watson 1996; Richardson and King 1998). In Yin *et al.*'s (2014) Chinese study, males were more likely to adopt a deep learning approach compared to women. Overall, few studies have examined the gender difference in students' perceptions to learning within a Chinese context.

According to Lake and Boyd (2015), a potential impact on the choice of learning approach appears to be age-related (Biggs 1987; Zeegers 2001; Baeten, Kyndt, Struyven and Dochy 2010). This is, as Gremler (2003) points out, due to the fact that the age range of the majority of university students is a period in which their learning styles are potentially still being developed. Thus, as Diseth, Pallesen, Brunborg and Larsen (2010) point out, the causal factor of age on the adoption of learning approaches needs to be investigated.

In summary, based on the literature review, the main aim of this study is to examine the key learning environment factors, as measured by the CEQ, that impact a Chinese accounting students learning approach to studying IFRS. To achieve this, the following research questions are addressed:

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

RQ2: Which student characteristics are likely to be associated with a deep approach to learning of Chinese accounting students in studying financial accounting?

3. Research approach

3.1 Data collection and survey instruments

After receiving ethics approval, the survey instrument was administered during the final week of semester two 2014, across two different universities located in Beijing. 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. The survey was distributed to approximately 650 accounting students of which 497 usable surveys were utilised for the study. This led to an approximate response rate of 76.4 per cent. The participants were enrolled in either the second or third year of their undergraduate accounting degree.

The dataset, which was collected in 2014, has currency since it provides original empirical evidence of the Chinese accounting students' perceptions to learning where existing studies are limited. The two participating universities are both ranked as first class universities for accounting in China. Both have similar accounting undergraduate programs which consists of major units such as financial accounting, management accounting, corporate finance and auditing. With respect to the teaching of financial accounting, both universities revised their financial accounting textbook and materials and required their teachers to compare the differences between the previous standards to IFRS.

The quantitative data consisted of a survey containing two instruments which are employed in this study. The first instrument was the CEQ which was based on the 25-item instrument used by Downie and Möller (2002). The 25-item CEQ version comprises five scale dimensions including, teaching quality (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 (Chalmers 2007). Of the five main CEQ scales, the generic skills scale is not explicitly linked to learning approaches (Chalmers 2007), nor is the single overall satisfaction item. Since the focus is on deep and

surface approaches to learning, both the generic skills scale and overall satisfaction single item are omitted from this study^{iv}. Thus, an 18 item scale was employed (see Appendix A).

Given the focus on IFRS teaching, respondents were asked to think about the financial accounting unit specifically rather than the accounting course as a whole. For each item, the participants were asked to indicate their level of agreement or disagreement with the relevant statement using a five-point scale from 5 for 'strongly agree' to 1 for 'strongly disagree'. The CEQ establishes the learning environment factors that are linked to research question one of this study.

The second instrument used in the study was Biggs' Revised Study Process Questionnaire (RSPQ-2F) which is used to assess tertiary students' use of different approaches to learning. A student's learning approach is categorised as deep when the student has an intrinsic interest in learning, while a surface approach is associated with a student who tries to meet the unit requirements with minimum effort (Stes *et al.* 2012). According to Biggs *et al.* (2001), the RSPQ-2F is a 20 item questionnaire that provides scores on two basic motives for learning scales and two learning strategy scales. Each item is a statement regarding either a learning motive or a learning strategy. The items in the questionnaire combine to give scores for four-subscales (deep motive, deep strategy, surface motive, and surface strategy). The four-subscales are then aggregated to form the two learning approach constructs (i.e., deep learning and surface learning). 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) (see Appendix B).

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. The instrument was also reported to have good construct validity (Biggs *et al.* 2001). As Stes *et al.* (2012) point out, analyses into the validity and reliability of the RSPQ-2F have yielded positive results. For the purpose of

this research, statements were reverse coded where necessary. The RSPQ-2F establishes the deep learning approach construct for this study which forms the dependent variable to be assessed for both research questions one and two.

3.2 Descriptive Statistics

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

Table 1: Descriptive Statistics

	Frequency	%
<i>Learning Approach</i>		
Non-deep Approach	458	91.9%
Deep Approach	39	8.1%
<i>Course Experience*</i>		
<i>Teaching Quality (TQ)</i>		
Yes	87	17.5%
No	410	82.5%
<i>Appropriate Workload (AW)</i>		
Yes	41	8.2%
No	456	91.8%
<i>Appropriate Assessment (AA)</i>		
Yes	31	6.2%
No	466	93.8%
<i>Clear Goals and Standards (CGS)</i>		
Yes	48	9.7%
No	449	90.3%
<i>Gender</i>		
Female	379	76.2%
Male	118	23.8%
<i>Age</i>		
Under 20 years old	95	19.1%
20 years old and over	402	80.9%

Note: N=497; *All course experience type discrete variables were assigned binary properties for ease of interpretation in the table above.

Table 2: Correlations matrix and Cronbach alphas

	TQ	AW	AA	CGS	DA
TQ	1.000				
AW	0.06	1.000			
AA	0.09	0.31**	1.000		
CGS	0.49***	0.25**	0.19***	1.000	
DA	0.24***	0.05	-0.14	-0.19***	1.000
Cronbach's α	0.73	0.49	0.53	0.52	0.87

Note: *** Correlation is significant at the 0.01 level (2-tailed).

The student characteristics in Table 1 are in line with the student enrolment numbers in the accounting course of the two Chinese universities specifically with respect to age and gender where females comprise a sizable majority of the enrolment. In addition, in keeping with the literature on teaching and learning approaches in China, students who adopted a deep approach to learning were rather small with only 8.1% identifying with a deep approach to learning in their financial accounting unit. The results show that respondents identified low learning environment levels via teaching quality (17.5%), appropriate workload (8.2%), appropriate assessment (6.2%) and clear goals or standards (9.7%). These results are an early indicator that instructors have room to improve the learning environment. Table 2 shows that none of the survey instrument variables are highly correlated with each other while the Cronbach alphas ranged from high to moderate reliability^v.

3.3 Data Analysis

The main purpose of the study is to determine whether Chinese accounting student perceptions of the learning environment impact upon their deep approach to learning. To achieve this goal, this study estimated a model for predicting students' approach to learning based from students' course experience. More specifically, the logistic model developed for the study has deep approach serve as the criterion variable and the four CEQ factors and two student characteristics serve as predictor variables. Thus, the default for the logistic model is that

students adopt a deep approach to learning. A deep approach to learning was defined as an accounting student who scored four and above on the composite deep approach construct, which was derived using Biggs' RSPQ-2F. A score below four was deemed as a non-deep approach^{vi}.

Given the nature of the dependent variable (the categorical variable deep approach to learning), this study employs a logistic regression model which is a commonly used quantitative choice modelling. 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. The use of a logistic regression to analyse data collected from a five-point Likert scale is in keeping with prior studies (see McDowall *et al.* 2015). When the dependent variable is nominal (1/0), binary models such as the logistic and probit regression models are appropriate to use. According to Amemiya (1981), the logistic regression model is preferred due to its simplicity and how it lends itself to easy interpretation^{vii}. This study therefore employs the logistic regression.

To ensure the robustness of the results, and in keeping with the prior work of Bowden, Abhayawansa and Manzin (2015), the analysis of the logistic model excludes any students who achieved simultaneously high scores in both deep and surface approaches. In all, only 8.1% of Chinese accounting students across two universities were deemed as having a deep approach to learning^{viii}. This initial finding supports the assertion that Chinese students are more likely to adopt a non-deep approach to learning. The model estimated in the present study for all accounting students is:

$$Z = \beta_0 + \beta_1 * \textit{Teaching Quality} + \beta_2 * \textit{Appropriate Workload} + \beta_3 * \textit{Appropriate Assessment} + \beta_4 * \textit{Clear Goals and Standards} + \beta_5 * \textit{Gender} + \beta_6 * \textit{Age} + \beta_7 * \textit{HE Institution} \quad (3)$$

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;

Teaching Quality [TQ]: (discrete variable, comprising summated scales of items 2, 5, 10, 12, 13 and 15 from Appendix A);

Appropriate Workload [AW]: (discrete variable, comprising summated scales of items 3, 16 and 18 from Appendix A);

Appropriate Assessment [AA]: (discrete variable, comprising summated scales of items 6, 7, 11 and 14 from Appendix A);

Clear Goals and Standards [CGS]: (discrete variable, comprising summated scales of items 1, 4 and 17 from Appendix A);

Gender: 0 = Female; 1 = Male;

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

HE Institution: 0 = University A; 1 = University B

4. Results and discussion

To ensure the validity of the logistic model, a number of steps were undertaken. Initially, outliers were omitted through standardising the residuals. Thus, a standardised residual larger than 3.0 or smaller than -3.0 was considered to be an outlier and removed from the analysis. In addition, Cook's distance was computed to measure the influence a case has on a solution. Cases (i.e., observations) with a Cook's distance of greater than 1.0 were omitted from the analysis (Hosmer and Lemeshow 1989, p. 180). The logistic model was then run using the baseline model (which includes all cases) and compared to the model which excluded the

outliers and influential cases. According to Hosmer and Lemeshow (1989), if the model excluding outliers and influential cases has a classification accuracy rate that is better than the baseline model, then the revised model should be interpreted. If the accuracy rate of the revised model without outliers and influential cases is less than 2% more accurate, then the baseline model can be interpreted. The baseline model for the logistic model resulted in a 92.6% classification accuracy compared to 94.2% for the revised model. Hence, the baseline model output is preferred for interpreting the results of this study.

A final validation criterion is to randomly divide the data into two subsets: (i) training sample; and (ii) holdout sample. According to Field (2009), split samples containing a training sample of 70% of the cases and a holdout sample containing the remaining 30% of the cases is valid. The classification accuracy for the holdout sample is used to estimate how well the model based on the training sample will perform for the population represented by the data set. If the classification accuracy rate of the holdout sample is within 10% of the training sample, it is deemed sufficient evidence of the utility of the logistic regression model. The accuracy rate for the training sample for the logistic model was 92.5% which meant the minimum requirement for the holdout sample is 83.3%. Since the actual accuracy rate for the holdout sample was also 92.5% the requirement has been satisfied. The above steps ensured the validity of the logistic model for this study.

As Table 3 shows the estimated equation for the study time period had a high level of significance ($p < 0.001$) for the logistic model. 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	Value
Significance of Estimated equation	<i>p</i> -value	<0.001
Goodness-of-fit:		
(i) Nagelkerke R ²		0.201
(ii) Hosmer-Lemeshow test	<i>p</i> -value	0.438
Prediction accuracy (baseline model)		92.6%

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

Table 4: Logistic function estimate: Chinese accounting students

Variable	<i>b_i</i>	S.E.	Wald	Sig.	Exp(<i>b_i</i>)	95% CI for Exp(<i>b_i</i>)	
						Lower	Upper
TQ	1.701	0.444	14.695	0.000	5.482	2.297	13.082
AW	0.130	0.398	0.106	0.745	1.139	0.521	2.486
AA	-0.229	0.340	0.453	0.501	0.796	0.409	1.548
CGS	1.075	0.496	4.692	0.030	2.930	1.108	7.748
Gender	0.725	0.393	3.403	0.065	2.065	0.956	4.461
Age	0.268	0.487	0.302	0.583	1.307	0.503	3.398
HE Institution	-0.151	0.398	0.145	0.704	0.860	0.394	1.874
Constant	-12.474	2.217	31.658	0.000	0.000		

4.1 Relative importance of the explanatory variables

In addressing research question one, the CEQ variable *teaching quality (TQ)* had the strongest impact on a deep approach to learning. The results suggest that the likelihood of a Chinese accounting student who perceives high teaching quality in the financial accounting unit adopting a deep approach to learning is 5.482 times larger than the odds for a Chinese accounting student who does not perceive high teaching quality in the financial accounting unit. This result supports the findings of previous studies (e.g. Crawford *et al.* 1998; Kreber 2003; Lizzio, Wilson, and Simons 2002; Ramsden 1991; Wilson, Lizzio, and Ramsden 1997) and indicates, as Belaineh (2017) points out, that an instructor's effort and commitment to teaching (i.e., teaching quality) can facilitate a Chinese students' deep approach. However, this finding is in contrast to Yin *et al.*'s (2014) Chinese study which found that TQ increased a

student's surface approach to learning. This contrast in results reinforces the notion that the nature of teaching in Chinese universities needs to be continually examined.

The results regarding *clear goals and standards (CGS)* suggests that the likelihood of a Chinese accounting student who is clear about the goals and standards of the financial accounting unit adopting a deep approach to learning is 2.930 times larger than the odds for a Chinese accounting student who is not clear about the goals and standards of the financial accounting unit. 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.

Conversely, the present study showed that *appropriate assessment (AA)* and *appropriate workload (AW)* were not significant in the analysis. This finding supports previous studies which showed that a heavy workload and constant assessment were not related to a deep approach to learning (e.g. Lizzio, Wilson, and Simons 2002; Wilson, Lizzio, and Ramsden 1997).

In addressing research question two, the variable *gender* was moderately significant. Specifically, the results suggest that males are 2.065 times more likely to adopt a deep approach to learning than females. The result supports the findings from Yin *et al.*'s (2014) Chinese study, which showed that males were more likely to adopt a deep learning approach. It also supports results obtained from Lastusaari and Murtonen's (2013).

Initial cross-institutional analysis conducted via the logistic regression model showed that there was no statistically significant differences with respect to respondents from either university adopting a deep learning approach. Further cross-institutional analysis was undertaken between the two participating universities regarding their perceived learning environment. Specifically, Mann-Whitney U tests were conducted with the results shown in Table 5 below.

Table 5: Cross-institutional Mann-Whitney U test

Variable	University A	University B
CGS	3.2950	3.2332
TQ	3.4357	3.3936
AW	3.2872	2.9695***
AA	3.0391	3.0146

Note: *** = Difference is significant at the 0.01 level

The results show that perceptions of the appropriate workload component of the learning environment, as measured by the CEQ, was statistically significantly higher for University A than for University B. The other learning environment elements were not statistically significantly different which suggests that the learning environment, as perceived by respondents, did not differ greatly which supports the inclusion of the two institutions in this study.

Overall, the results convey a clear message for a deep approach to learning where the empirical evidence supported the claim that students' perceptions of high quality teaching and having clear goals and standards are key determinants to a deep approach to learning (Wilson, Lizzio, and Ramsden 1997). The implications of the results for accounting educators are elaborated upon in the next section.

5. Conclusions and future directions

The present study explored the key factors that determine what aspects of the learning environment created in two semester-long financial accounting classes, as measured by the CEQ, influence students' approaches to learning, as perceived by Chinese accounting students. The findings from this study will extend current knowledge of Chinese students' learning approaches. The descriptive results suggest a need to re-examine the nature of teaching in Chinese universities. As the overall numbers of those respondents who undertook a deep

approach to learning (8.1%) indicate, the vast majority of Chinese students seem to be content to merely reproduce, rather than seek meaning in the teaching materials.

On a positive note, the results of the logistic model showed that an increase in teaching quality facilitated students' deep approach to learning. However, within the context of the overall number of students adopting a non-deep approach, this result suggests that instructors need to be expound greater effort and commitment to reverse the passive approach taken by Chinese accounting students. In addition, the logistic model showed that instructors who communicated their expected academic standards and program goals to Chinese accounting students with perceived greater clarity positively impacted the number of Chinese accounting students who adopted a deep approach to their learning. Once again, within the context of the overall number of students adopting a non-deep approach, this result suggests that instructors need to provide Chinese accounting students with more information regarding the learning objectives of the unit and the standards expected from them. This would reduce ambiguity regarding unit expectations and impact upon the learning approach adopted.

In addition, the non-significant results suggest that instructors need to conduct appropriate assessment tasks. From an IFRS perspective, this could comprise effective feedback for student learning which focuses on students' mastery and understanding of knowledge based on the IFRS conceptual framework. In addition, the workload undertaken by Chinese accounting students imply that changing (i.e., reducing) the amount of students' workload, in collaboration with more appropriate assessment tasks, could be an advisable way to improve the quality of teaching and learning within this unit and increase effectiveness of teaching IFRS in Chinese universities.

The suggestions outlined above will encourage the two universities to recheck their teaching and learning practices and develop strategies to improve teaching quality. A practical implication of this study suggests that, when one considers the characteristics of, and the

relationship between, students' course experience and approaches to learning, student independence should be particularly encouraged.

It is acknowledged that the findings of this study are not necessarily generalisable to all accounting degree courses across China. Although the study included a relatively large sample size, the study was restricted to two universities. Another limitation of the study was the absence of variables that could be correlated with student interest. For instance, future studies could include factors such as why a student chose to study accounting since this could be expected to influence a student's approach to learning. In addition, as Yin *et al.* (2014) point out, there might be influences of a cultural context on the psychometric qualities of the CEQ.

Given the nature of the research, a useful extension of this study would be to conduct qualitative analyses based on interviews with students thus providing a deeper and more versatile perspective on the impact of the teaching experience in determining a deep approach to learning. A further extension of this study could address the stability of the CEQ and a deep approach to learning via a longitudinal study thus testing the likelihood that the CEQ is associated with a deep approach to learning over the duration of an accounting degree.

Future research could also more fully address the differences in the content and teaching focus of accounting units to allow for the testing of differences in learning approaches within an accounting degree.

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Appendix A: Extract of questionnaire – Abridged CEQ scale (18 items)

Statement	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
1. It was always easy to know the standard of work expected in financial accounting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The teaching staff of this unit motivated me to do my best work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The work-load was too heavy in this accounting unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I usually had a clear idea of where I was going and what was expected of me in this unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The staff in this accounting unit put a lot of time into commenting on my work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. To do well in this unit all you really needed was a good memory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. The staff seemed more interested in testing what I had memorised than what I had understood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. It was often hard to discover what was expected of me in this unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I was generally given enough time to understand the things I had to learn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. The staff made a real effort to understand difficulties I might be having with my work in this accounting unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. The assessment methods employed in this unit required an in-depth understanding of the unit content	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. The teaching staff in this unit normally gave me helpful feedback on how I was going	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. My lecturers in this unit were extremely good at explaining things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Too many staff in this unit asked me questions just about facts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. The teaching staff worked hard to make this unit interesting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. The sheer volume of work to be got through in this unit meant that it couldn't all be thoroughly understood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. The staff in this unit made it clear right from the start what they expected from students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. There was a lot of pressure on me as a student in this unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix B: Extract of questionnaire – Learning approaches scale (20 items)

Statement	Never or only rarely true of me	Sometimes true of me	True of me half the time	Frequently true of me	Always or almost always true of me
1. I find that at times studying financial accounting gives me a feeling of deep personal satisfaction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I make a point of looking at most of the suggested readings that go with the lectures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. My aim is to pass this financial accounting unit while doing as little work as possible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I only study accounting standards seriously from what is given out in class or in the course outlines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I feel that virtually any topic in accounting can be highly interesting once I get into it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I find the study of accounting standards interesting and often spend extra time trying to obtain more information about it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I do not find the study of accounting standards very interesting so I keep my work on this topic to a minimum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I learn some things by rote, going over and over them until I know them by heart even if I do not understand them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I find that studying accounting topics can at times be as exciting as a good novel or movie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I test myself on important accounting topics until I understand them completely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I find I can get by in most assessments by memorising key sections rather than trying to understand them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I generally restrict my study to what is specifically set as I think it is unnecessary to do anything extra	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I work hard in financial accounting because I find the material interesting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I spend a lot of my free time finding out more about interesting accounting topics which have been discussed in different classes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I find it is not helpful to study accounting topics in depth when all you need is a passing acquaintance with topics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I believe that lecturers should not expect students to spend significant amounts of time studying material everyone knows won't be examined.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I come to most accounting classes with questions in mind that I want answering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. 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)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I see no point learning material which is not likely to be in the examination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I find the best way to pass financial accounting examinations is to try to remember answers to possible questions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ⁱ 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).

ⁱⁱ 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).

ⁱⁱⁱ This is known as the Chinese learning paradox (Biggs and Watkins 1996).

^{iv} As Kreber (2003) adds, the single satisfaction item is considered insufficient to accurately measure this construct. Moreover, the CEQ was not developed to be a proxy indicator of satisfaction (Ramsden 2003).

^v Item 16.8 was removed to improve the reliability score for the CGS scale while item 16.9 was removed to improve the reliability score for the AW scale.

^{vi} This demarcation approach has been used in prior studies such as McDowall *et al.* (2015).

^{vii} Amemiya (1981) has a full discussion of these two advantages.

^{viii} As Vittinghoff and McCulloch (2007) point out, the rule of thumb for logistic models has been traditionally viewed as a minimum of 10 outcome events per predictor variable (EPV). After conducting a large simulation study they concluded that there were a number of instances where analysis is acceptable despite having less than the 10 EPV threshold. They suggest that an EPV of 5-9 with at least 30 events is sufficient. In the present study, the logistic model comprises 497 total observations of which 39 consist of the EPV (Deep approach = 1). With 6 variables in the model, the ratio is 6.5 outcomes per predictor variable which satisfies the aforementioned criteria.