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Students' Perceptions And Learning Approaches in Accounting: The Role of Mobile Apps Technology

**Marziana Madah Marzuki^a, Wan Zurina Nik Abdul Majid^a,
Roslina Salwani^a, Mohd Zafian Mohd Zawawi^b
and Hatinah Abu Bakar^c**

^aFaculty of Accountancy, Universiti Teknologi MARA

^bFaculty of Information Management, Universiti Teknologi MARA

^cFaculty of Business and Management, Universiti Teknologi MARA

ABSTRACT

Accounting is described as a highly technical subject as students are supposed to know various accounting format and standard starting from recognizing business documents, transferring business transactions to journal and ledgers, double-entry system and preparing financial statements. The roles of accountants are associated with the work of bookkeepers with stereotype being dull, dry, unimaginative, and precise and abiding to rules. These perceptions have jeopardized the status of the accounting profession among the public. Realizing the negative perceptions of accounting as a subject, this study explored the perception of students in relation to the application of new technology like mobile apps in the accounting teaching and learning process. Thus, the objective of this paper is first to investigate students' perception on accounting as a subject and how the perceptions influence their approaches to learning. In addition, this study investigated students' perceptions on the role of mobile-app technology in their approaches in learning accounting. Based on a self-administered structured questionnaire developed and distributed to 153 respondents that comprised of non-accounting students from all branches of Universiti Teknologi MARA (UiTM) in Malaysia, the results show that there is a significant relationship between students' perceptions of accounting and their approaches in learning which further indicates that positive perceptions lead to deep approaches in learning accounting which relates accounting to experiences and critical approaches, meanwhile negative perceptions lead to surface level approaches of learning which relates accounting to memorization and rote learning. When we tested the relationship between learning approaches

and students' perceptions on the role of mobile apps in the teaching and learning process, the result shows insignificant results which indicates that students could not perceive the role of mobile-apps technology in accounting as a subject. This is probably due to inexperience of using this tool in their learning experience as for now being mobile apps have not been introduced as one of the teaching tools in accounting as a subject. Our study provides implications that accounting education in Malaysia needs to consider the new reforms in the teaching methods to accommodate the evolvement of technology in the education process in this new era which may help to instil a positive perception towards accounting as a subject. Thus, this study suggests that accounting mobile-apps technology should be invented, standardized and introduced as one of the learning tools in accounting to motivate students to learn accounting in a fun and enjoyable way and hence diminish the negative perceptions related to accounting.

Keywords: *Accounting, approaches, mobile-apps technology, pedagogical, perceptions.*

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INTRODUCTION

Accounting is described as a highly technical subject as students are supposed to know various accounting formats and standards, starting from recognizing business documents, transferring business transactions to journal and ledgers, double-entry system and preparing financial statements. Previous studies have found that accounting is perceived to be too number-oriented, dull and boring (Cohen & Hanno, 1993, Hung, 2014). The roles of accountants are associated with the work of bookkeepers stereotyped as being dull, dry, unimaginative, and precise and abiding to rules. These perceptions have jeopardized the status of the accounting profession among the public. Realizing the negative perceptions of accounting as a subject, this study explored the perceptions of students on the adoption of mobile apps in the accounting teaching and learning process. Therefore, the objectives of this study were: first, to investigate students' perceptions of accounting as a subject and how the perceptions influence their approaches to learning. Second, this study investigated the relationship between different approaches of learning accounting and students' perceptions on the role of mobile apps technology in the accounting teaching and learning process.

Watty (2016) stresses that the digital shift taking place in universities around the world has been explored by research into higher education since the 1980s (CarringtonCrisp, 2014; Ernst & Young, 2013; Tynan, Ryan, Hinton, & Lamont Mills, 2012; NMC, 2014). The studies proposed that if institutions wish to remain competitive and relevant in the 21st century, they will need to embrace the opportunities afforded by technology, particularly in relation to teaching and learning practices (Edmunds, Thorpe, & Conole, 2012). Thus, in the last decade, academics have been encouraged to implement new and innovative technologies in their classrooms and curricula (Kennedy, Judd, Churchward, Gray, & Krause, 2008). Consequently, the massive infusion of mobile phones and rapidly improving Internet capabilities have extended electronic learning (e-learning) into wireless or handheld computing devices with the help of a mobile learning (m-learning).

Despite the extension of new technology, few studies have been done to explore the use of this technology in the accounting teaching and learning process. Khaddage and Lattemann (2013) highlight that there is an urgent need to develop unique approaches that can formulate the basis of

new mobile apps for teaching and learning in higher education institutions. Despite that, Khaddage and Lattemann (2013) stress that among the major issues claimed by universities is there is yet one standardized mobile device to be used by all students. This study contributes to the development of pedagogical approaches in accounting courses as learning and teaching with mobile technologies is beginning to make a breakthrough. This is in line with the evolution of mobile technologies among students in higher learning institutions. In 2008, although all students owned feature phones, very few had access to other mobile devices and rarely used them to support their learning. In 2013, the picture had changed significantly, with some 80 per cent of students owning smart phones and all had access to mobile devices of some sort. Ultimately, such development is hoped to change the perceptions of students towards accounting courses and eventually increase the number of experts in the industry.

LITERATURE REVIEW

Students' Perceptions on Accounting

Students' perceptions or expectations of learning are very essential as it will influence how they approach their learning experience and, thus, will result in their academic performance (Ferreira & Santos, 2008). Al-Naggar et al. (2014) state that monitoring the perceptions of students is necessary in order to continuously improve educational environment. Based on the 3P Model in Duff and Mladenovic (2015), students construct their own meaning of learning based on their own perceptions and expectations of the subject and this prior knowledge will be reflected in their learning experience using their approaches to learning. According to this model, perceptions reflect student perceptions of the learning context, i.e., teaching and learning activities, curriculum, assessment methods, classroom and institutional climate; and their general orientation to learning. If educators can understand students' perceptions of the assessment, the curriculum, the teaching and the support they receive, it is expected that better learning outcomes can be achieved as educators have sought to adapt the context of learning to alter students' perceptions, and in turn adopt more 'desirable' approaches to learning. Previous studies have found that accounting is perceived to be too number-oriented, dull and boring (Cohen & Hanno,

1993, Shu Hung, 2014). The roles of accountants are associated with the work of bookkeepers with stereotype being dull, dry, unimaginative, and precise and abiding to rules. These perceptions have jeopardized the status of the accounting profession among the public. Byrne & Willis (2005) investigated Irish secondary students' perceptions of accounting and found that the students percept accounting subject as boring, definite, precise and compliance driven. If compared between the gender, female Irish accounting students' viewed accounting as more definite, precise and compliance driven than males. According to Mladenovic (2000), this negative perception is often created or reinforced in introductory accounting courses.

Ramsden (2003) argues that better learning outcomes can be achieved if educators can understand students' perceptions on the subject they learn in terms of assessments as well as the curriculum. Consequently, educators can adopt more 'desirable' approaches to learning to alter students' perceptions which, in turn, leads to better academic performances (Birkett & Mladenovic, 2009; Hall et al., 2004). Based on the pioneering work of Marton & Saljo's (1976), Duff and Mladenovic (2015) outline that students' perceptions on learning accounting lead to two different approaches to learning experienced by students, namely, a 'deep' approach and a 'surface' approach. Trigwell et al. (2012) found that students who more strongly experienced positive emotions and weakly experienced negative emotions are likely to be adopting more of a deep approach to learning and vice versa.

Accounting Learning Experience

Deep Approach and Surface Approach

A deep approach is defined as looking for meaning in the matter being studied and relating it to other experiences and ideas with a critical approach. Ullah et al. (2011) find that those students who had positive perceptions of the instructional practices, the learning resources, and their acquisition of generic skills were more likely to adopt a deep approach. They prefer courses, teaching and assessments that can support them to have deep understanding. The deep approach engages them in higher-order cognitive tasks (Jackling, 2005), deals with critical approach (Duff & Mladenovic, 2015), requires cooperative learning (Zraa et al, 2011) and seeks for meaning to change how they perceive a topic (Saravanamuthu, 2015). Developing deep approaches to learning can enhance students' engagement with their

subject material and improve analytical and conceptual thinking skills (Hall et al., 2004).

In contrast, students who have negative perceptions of the appropriateness of the assessments and the workload tended to adopt a surface approach and they prefer courses, teaching and assessments that are based on mere transmission of information. A surface approach is described as reliance on rote-learning and memorization in isolation to other ideas. A surface approach entails over concentrating on the technical skills (Evan, 2014) and focus on memorization and rote learning (Birkett & Mladenovic, 2009). Nevertheless, accounting students seem to adopt higher surface learning approaches and lower deep learning approaches compared to other students (Eley, 1992; Gow et al., 1994; Booth et al., 1999). Thus, there has been a call for education reform by policy makers, the accounting profession, employers and educators to develop learning environments that motivate students to move away from procedural or surface approaches to learning towards a conceptual or deep approach to learning (Evan, 2014). Consequently, more concern should be put on accounting students who are perceived as static, dull, technical oriented, less cooperative due to their perceptions on the subject which is viewed as overemphasis on technical skills and preparation for the examination.

Students' Perceptions and Accounting Learning Experience

Ullah et al. (2011) indicate that the relationship between students' perceptions and their approaches in learning is construed differently in different countries and contexts. They explain that their students' perceptions were based on instructional practices, acquisition of generic skills, appropriateness of assessments, appropriateness of their workload, and available learning resources. Thus, different institutional settings might lead to different perceptions and, thus, might influence the relationship between perceptions and approaches in learning differently. Ullah et al. (2016) highlight that in the context of medical students in Pakistan, they are highly qualified and highly motivated. They have the opportunity to apply their academic knowledge and yet they are also expected to tolerate a heavy curriculum. Their findings support that medical students who perceived that their assessment and workload were inappropriate adopted a surface approach in their learning and studying. Meanwhile, students who preferred a student-centered approach to teaching tended to adopt a deep approach

in their learning and studying. Nevertheless, their results show that the incorporation of problem-based learning in medical curriculum had not led to any enhancement of their perceptions and preferences. They attribute the results to the hybrid nature of their programmes, in which problem-based activities were combined with more conventional forms of teaching and assessment, and to anxiety and stress which seem to be common among students at medical schools in Pakistan.

Beaten et al. (2010) discussed that even though a considerable amount of research has concentrated on students' perceptions, other factors may pre-influence students' approaches in learning such as workload, teaching, support, clarity of goals, usefulness of course book, independent study, relevance to professional practice and assessments have been empirically investigated in relation to students' approaches to learning. Hall et al. (2004) find that by changing the learning environment, accounting students exhibited a small but statistically significant increase in their deep learning approach, and a small but statistically significant reduction in their surface learning approach. Their study relates the learning environment as incorporating activities into the learning environment that developing life-long learning skills, analytical thinking, and the ability to work in teams.

The studies on the relationship between perceptions and approaches in learning are rather scarce in Malaysia. Goh (2008) conducted a study among twinning programme students in Malaysia and found that they perceived lack of subject expertise and the lack of the kinds of knowledge lecturers have as factors that contribute and hindered deep approaches to learning. Ismail et al. (2013) investigated the relationship between students' beliefs about the nature of knowledge and learning approaches among 1,405 students of higher institutions of learning, both public and private in Malaysia. Their results revealed that there is a high and significantly positive correlation between the various epistemological beliefs of students and their inclination towards adopting the surface learning approach.

Despite the mixed approaches in the relationship between students' perceptions and approaches in learning, it is believed that perceptions have a significant relationship with students' approaches in learning. Even though there are some other factors that influence approaches in learning, other factors will pre-influence students' perceptions and, hence, will influence

their approaches in learning accounting. This is because accounting, by its nature, has been perceived to be too number-oriented, dull and boring (Cohen & Hanno, 1993, Hung, 2014). Thus, most of the students who have accounting lessons in their curriculum have a prejudice against accounting even before they experienced it (Kutluk, 2014).

Therefore, it is hypothesized that:

H₁: There is significant relationship between students' perceptions and approaches in learning accounting.

We further hypothesize that:

H_{1a}: There is significant relationship between positive perceptions and deep approaches in learning accounting.

H_{1b}: There is significant relationship between negative perceptions and surface approaches in learning accounting.

The Role of Mobile-Apps in Accounting Learning

The new era of technology has witnessed the evolvement of technology being expanded to the education process whereby the learning approach has transited from desktop to laptop and from laptop to palmtop devices such as mobiles and tablets (Embi, 2013). In relation to mobile learning, Luckin et al. (2005) defined a learning context as an 'ecology of resources' and have shown how technology can link different resource elements within and across learning contexts. Recently, mobile technologies are becoming more entrenched, ubiquitous and networked, greater variety in applications with expanded and superior capabilities and capacities, greater social interactions, context awareness and internet connectivity. Such transition of technologies has contributed a huge impact to education and the learning process as learning will go more and more beyond the realm of the classrooms and be embedded into the learner's environments, both real and virtual (Mohd Nordin et al., 2010; Ros i Solé, Calic, & Neijmann, 2010).

Khaddage and Lattemann (2013) quoted the definition of mobile learning from Crompton (2013) which was defined as 'learning across multiple contexts, through social and content interactions, using personal

electronic devices. The use of m-learning is expected to grow tremendously with the steady rise in the percentage of people in the emerging markets who own and use a smartphone. According to the statistics portal of telecommunication, the production of cheaply manufactured mobile phones and a decrease in the cost of service plans have helped drive smartphone uptake across the whole of the Asia-Pacific region. The statistics revealed that in 2015, the number of smartphone users in Asia-Pacific is estimated to number just over 1 billion. It is expected that by 2019, smartphone penetration rate among mobile phone users will be over 50 percent to reach which equals to almost 1.5 billion in the region. This statistic shows the number of smartphone users in Malaysia from 2017 to 2021 is expected to increase from 17.8 million to 21.3 million users.

According to Kukulska-Hulme and Traxler (2005), "Mobile Learning is partly about learning and partly about the breakthroughs of mobile computing. It is rapidly becoming a credible and cost-effective component of online and distance learning and anyone who is developing courses in companies, universities and colleges must consider carefully what it has to offer" (p.2). Simply defining, Wexler et al. (2007) refer m-learning as "Any activity that allows individuals to be more productive when consuming, interacting with, or creating information, mediated through a compact digital portable device that the individual carries on a regular basis, has reliable connectivity, and fits in a pocket or purse" (p. 21). Although these definitions have been provided from different aspects, they share the same idea, i.e., the mobile devices (such as personal digital assistants, cellular phones, and tablets) play an important role in the learning activities immaterial of whether the activities are conducted in the fields or in classrooms (Hwang & Tsai, 2011; Vavoula, Sharples, Rudman, Meek & Lonsdale, 2009).

Mobile technologies offer a rich content of mobile learning and deliver information effectively for students during their learning activities. The mobility feature also makes m-learning become more and more distributed (Chang et al., 2003; Corlett et al., 2005; Clough, 2008). According to Furner et al. (2014), mobile apps have transformed the way firms and consumers communicate with each other. Mobile devices and computing now dominate the digital landscape with 60% and there is a continual increase of online activities now originating from mobile phones and tablets. Nevertheless, despite the upswing growth in the use of smartphones, the use of mobile

apps in the teaching and learning process is less explored. There are only a few mobile apps in the area of higher education, especially at universities and there is very little mobile support in the current online-course delivery systems in most institutions (Khaddage & Lattemann, 2013; Seibu & Biju, 2008). It is expected that with the advent of mobile technologies and affordable mobile-based connection rates, m-learning will become a part of learning content distributor to students at higher learning institutions (Tatar, Roschelle, Vahey & Penuel, 2003).

Previous studies have discussed the use of mobile phones in language learning (Godwin-Jones, 2011; Steel, 2012), science learning (Zydney & Warner, 2016), accounting learning (Richardson et al., 2013), medical education (Wallace et al., 2012) and interdisciplinary courses (Rossing et al., 2012). Rossing et al. (2012) investigated the use of iPads in the classroom in Indiana University-Purdue University Indianapolis (IUPUI) in order to identify student impressions of mobile technology in the classroom. 209 students were asked to complete a survey with both Likert-scale and open-ended responses after the final class session in which iPads were used for their learning activity. This concurrent mixed method approach allowed for the collection of both qualitative and quantitative data. The result indicated that students perceive this access as beneficial to their learning. The three strongest perceptions in the findings were “The iPad activity helped me connect ideas in new ways” ($m = 4.343$, $sd = 0.792$), “The iPad activity helped me participate in the course activity in ways that enhanced my learning” ($m = 4.188$, $sd = 0.809$), and “The iPad activity helped me apply course content to solve problems” ($m = 4.092$, $sd = 0.8$). The qualitative data supported these findings, particularly student responses in the themes of positive novelty, immediate access to information, maximize the collaborative potential of mobile tablets, versatility and highly adaptable for many learning styles and preferences.

Wallace et al. (2012) conducted interviews and online surveys with medical students, residents and faculty at a large Canadian medical school in 2011 to investigate how medical teachers and learners use mobile computing devices such as the iPhone in medical education and practice. The result of their study shows that over 85% of participants reported using a mobile-computing device. The main uses described for mobile devices related to information management, communication and time management.

The respondents described that the use of mobile computing devices allows them to get fast access to information on the internet. They use the devices to look up unfamiliar terms or at least one in the normal course of each day. The respondents also used the devices to access several information sources such as online textbooks, medical podcasts, medical calculators and online lectures. In addition, 77 percent of the respondents indicated they use at least one medical app regularly. They concluded that the new technology has offered potential in learning and patient care.

Role of Mobile-Apps and Accounting Learning Experiences

Despite of the importance of mobile apps in today's learning process, there is scarce evidence on the effect of how this technology relates to deep and surface approaches to learning accounting. Most of the studies done relate mobile apps with learning styles in general. With the evolvement of new technology in learning process and the calls to move towards deep approaches, there is less evidence whether these two needs are aligned to each other. According to Lindsay (2016) whether mobile technologies can motivate and sustain deep levels of engagement is perhaps questionable, given their particular design features and constraints. The potential value of mobile technologies may lie instead of motivating deep engagement. Nevertheless, previous researches argue that mobile apps can promote higher-order thinking skills among learners which can be related to the deep approach (Cheong et al., 2012, Chan et al., 2015). It is believed that well-designed games in mobile apps can engender deep learning which can produce real understanding, the ability to apply one's knowledge and even to transform that knowledge for innovation (Gee, 2007).

In another study, Richardson et al. (2013) explored the use of iPod as mobile technologies in accounting education and related the usage of the mobile technologies with accounting learning styles. A total of 23 accounting students were selected to respond to the surveys, representing a response rate of 82 per cent. Students enrolled in this survey were graduates of an accounting programme in a mid-sized Australian university who were seeking an academic credential that qualifies them for entry into the chartered accounting programme of the Institute of Chartered Accountants in Australia (ICAA). The course is a technical accounting unit in which students do not have to attend face-to-face lectures and workshops, but instead, are provided with pre-recorded

audio and visual topic summaries and worked examples (podcasts) that were recorded using the Camtasia software in MP4 format. The material used in the course included a recommended textbook, lecture slides (in PDF format) and worked examples (PDF format). iPods were used as a proxy for mobile devices with audio and visual functionality (iPod Classic) so that students could download podcasts of 12 recorded lecture presentations (consistent with a 12-week course schedule) to support course content. The recorded lecture summaries consist of topic overviews with examples and calculations in the application of the theories and concepts introduced in the lecture presentation.

The result indicates that the learning styles of individual students, generally, had no significant correlation with the attitudes towards using iPods, implying that iPods provide similar benefits to students, irrespective of their preferred learning style. However, a significant positive correlation was detected for visual learners who considered iPods to be an important component in their learning items relating to performance in exams and achieving higher grades. This finding is interesting as visual learners perceive iPods as an important tool for helping them to prepare for exams and achieve higher final grades. The implication of the result stresses that students' conception of learning is an important variable that influences their approach to learning which, in turn, affects the quality of learning outcomes. Therefore, online learning spaces should consider different learning styles so that delivery is appropriately matched with students' approaches to learning.

Despite the advantages of m-learning discussed in the literatures, not much has been done to extend m-learning to accounting courses. One of the concerns is the possibility of this device to replace classroom in the future. Gikas and Grant (2013) stress that learning with wireless or handheld devices will never replace classroom or other electronic learning approaches. Nevertheless, if leveraged properly, mobile technology can complement and add value to the existing learning models. Previous research has been done to investigate students' perceptions and experience in using mobile devices in their teaching and learning process. Therefore, this study hypothesizes that:

H₂: There is significant relationship between students' approaches in learning accounting and the role of mobile apps.

We further hypothesize that:

- H_{2a}: There is significant relationship between deep approaches in learning accounting and the role of mobile apps
- H_{2b}: There is significant relationship between surface approaches in learning accounting and the role of mobile apps

METHODOLOGY

A total of 153 undergraduate non-accounting students studying at Universiti Teknologi MARA (UiTM), participated in this research. A simple random sampling was used to gather data using adopted questionnaires. The simple random sampling assures every element of the population has an equal probability of being chosen as a sample. This study chose UiTM as this university has branches in every state in Malaysia and, thus, represents a well-established higher learning institution in Malaysia. The students from various disciplines which are Diploma in Banking, Diploma in Business Studies, Diploma in Public Administration, Diploma in Statistics, and Diploma in Computer Science were selected as they represent non-accounting students who are required to take Introduction to Financial Accounting during their first semester. This study used only UiTM to avoid bias in the content of accounting subject for non-accounting students in Malaysia as this university uses the same syllabus for all its branches in all the states in Malaysia. The content of Financial Accounting subject in diploma program covers topics that include: Introduction to Accounting, Accounting Concepts, Journals, Ledgers, Trial Balance, Financial Statement, Adjusting Entries, Adjusted Financial Statement, Bank Reconciliation, and Ratio Analysis. Prior to March 2011, students were tested with 5 subjective questions to be answered; including introduction to accounting, balance day adjustment, financial statements, bank reconciliation and ratio analysis. Meanwhile, starting from June 2012, the numbers of questions were reduced to four whereby balance day adjustment is only tested in a question on Adjusted Financial Statement.

A self-administered, structured questionnaire was developed for the survey. The question items on the research instrument were based on Mohd Hashim et al. (2012) with some modifications with reference to the literature

review. Deep perception was measured by 7 items, surface perception and roles of mobile app was measured by 4 items meanwhile perception of accounting was measured by 9 items. The items were measured on a five-point Likert scale where ‘5’ represented strongly agree, and ‘1’ represented strongly disagree. Descriptive statistics were reported for analysis of the demographic profile of respondents, followed by multicollinearity to test for correlations among variables, reliability analysis to test consistency of items and hypotheses testing using hierarchical multiple regression. Table 1 provides the elaboration on the items used to measure the scale applied in this study:

Tables 1: Items Used for Measurement of Scales

| Instruments | Items |
|--------------------------|---|
| Deep | Learning accounting requires sound analytic more than math skills. Learning accounting need to be done in groups. Learning accounting requires logical reasoning. Learning accounting requires deep understanding. Learning accounting requires cooperative learning. Learning accounting engages higher order cognitive tasks Learning accounting enhances conceptual thinking skills. |
| Surface | Learning accounting requires many hours of studying that most students aren't used too. Learning accounting is a very mechanical process and requires a lot of practice to score very high marks. Lectures and tutorials for 3 hours per week are not enough. Learning accounting requires a lot of memorization. |
| Roles mobile apps | The accounting mobile application is a user-friendly application. This application helps increase the understanding of accounting terms. The accounting mobile application is one of the ways to help students capture accounting transactions in real practice. This application will help students in gaining easy explanation on certain transactions |
| Perception on accounting | <p>Negative perception: Accountants are hard-working and organized persons. Accounting knowledge can be gained through memorizing debits & credit entries. Accounting is all about hard work Accounting requires you to be a math expert. Accounting is all about practicing</p> <p>Positive perception: Accounting is an enjoyable subject. Accounting is a field of study that requires logical reasoning more than math skills. Accounting demands a high level of critical analysis. Accounting needs creative thinking.</p> |

The questionnaire was pre-tested on a small sample of students for refinement in order to get a more effective instrument. It was finally administered to the target population through personal contact by the researcher for two weeks. One section of the questionnaire asked respondents on demographic information such as age, background knowledge, and accounting background. Another section of the questionnaire asked the student respondents about their perceptions towards accounting and their experience in learning accounting. The last section of the questionnaire consisted of questions on students' perceptions on the role of mobile-apps technology in accounting as a subject. Data were analysed using the SPSS20.0.

Model of the study

This study applied the 3P Model adapted from Duff and Mladenovic (2015) that concentrates on Perceptions, Process Model and Product as presented in Figure 1. The model is integrated in this study in order to test the research objectives of this study whether students' perceptions influence approaches to learning and whether the approaches influence the needs of mobile apps in the teaching and learning process.

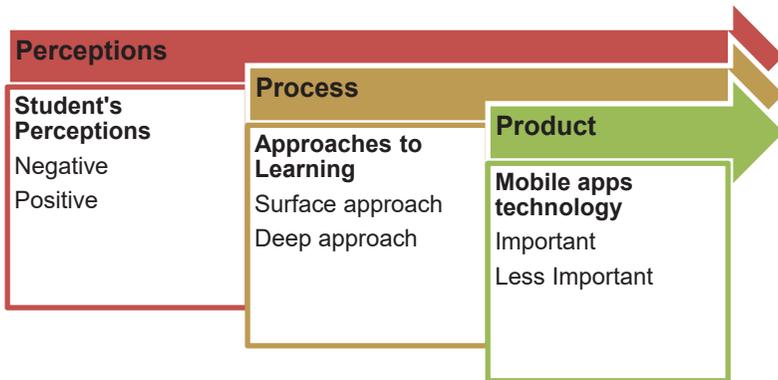


Figure 1: 3P Model

Perceptions encompass students' perceptions of the teaching-learning environment. Process factors describe individual differences in the quality of learning and are said to affect learning outcomes. Product factors refer to product learning outcomes. The model serves as a model for understanding

the learning process and acts as an instrument for practitioners for enhancing the quality of their learning outcomes (Coertjen *et al.*, 2016).

This model depicts the interrelationships between how students perceive their learning and how their perceptions and how these perceptions influence their learning (process), and this learning process will eventually affect the products used in their learning processes. This study explored antecedents which is accounting students’ expectations of learning, their reflections on learning (processes); and their product outcomes. According to this model, perceptions reflect student perceptions of accounting as a subject as either positive or negative. Different perceptions will lead to different approaches to learning either deep or surface approach. If the educators can understand students’ perceptions of the subject, it is expected that better learning approaches can be achieved as educators have sought to adapt the context of learning to alter students’ perceptions, and in turn adopt more ‘desirable’ products of learning.

FINDINGS AND DISCUSSION OF THE STUDY

Reliability Test

A reliability test was conducted to determine the internal consistency of the measures used. According to Chakrapani, (2004), the value of Cronbach’s alpha of less than 0.5 is considered poor, and greater than 0.5 is considered acceptable. Since the value of Cronbach’s alpha for every factor was greater than 0.50 it indicates that the instrument is a reliable one (Nyengane, 2007). Therefore, the entire construct were considered to have adequate reliability. Hence, the researcher can further the analysis (Maltby, 2007).

Table 2: Reliability Test

| Instrument | Number of Item | Cronbach’s Alpha |
|--------------------------|-----------------------|-------------------------|
| Perception on accounting | 9 | .544 |
| Deep | 7 | .636 |
| Surface | 4 | .655 |
| Roles of mobile app | 4 | .857 |

Pearson Correlation Analysis

Multicollinearity has to do with correlations among variables. Multicollinearity exists if a correlation between two or more variables is 0.9 or greater (Tabachnick & Fidell, 1996). Since all the measures of correlation for all the variables are below 0.9, it can be concluded that the multicollinearity problem does not exist.

Table 3: Correlations among variables

| Instruments | Surface | Deep | Roles of App |
|--------------|---------|-------|--------------|
| Surface | 1 | | |
| Deep | 0.616 | 1 | |
| Roles of App | 0.043 | 0.023 | 1 |

Normality

Normality test are used to determine if a data significantly deviate from a normal distribution. Based on Table 4, the result of normality test ranges from -0.126 to -0.1.276, considered that all values are acceptable. According to George and Mallery (2010) the value between -2 and +2 are acceptable and considered as a normal. It means that all variables that were used in this study are normal. Hence, the research proceeded with further analysis.

Table 4: Result of Normality Test

| | Perceptions | Roles of mobile app | Surf | Deep |
|----------|-------------|---------------------|--------|--------|
| Skewness | -0.126 | -0.462 | -0.532 | -0.370 |
| Kurtosis | -1.084 | -1.204 | -1.276 | -0.857 |

Regression Analysis

To test the hypotheses using the SPSS, hierarchical multiple regression was used following Coakes et al. (2006) This method was selected as the order in which the independent variables are entered into the regression equation were known, and were based on logical or theoretical considerations (Tabachnick & Fidell, 1983). Table 5 shows the results of the hierarchical multiple regression analyses. The focus was on the relationship between a dependent variable and one or more independent variables.

Table 5: Regression Analysis

| Hypothesis | T-value | Significant | Result |
|--|---------|-------------|---------------|
| H _{1a} : Positive perceptions.....>deep approaches in learning accounting. | 7.646 | 0.000** | Supported |
| H _{1b} : Negative perceptions.....>surface approaches in learning accounting. | 7.637 | 0.000** | Supported |
| H _{2a} : Deep -----> Roles of Mobile Apps | -0.058 | 0.954 | Not Supported |
| H _{2b} : Surface -----> Roles of Mobile Apps | 0.455 | 0.650 | Not Supported |

**($p < 0.05$) significant level

As in Table 5, there is significant relationship between students' perceptions and their approaches in learning accounting. The result indicated that students' positive perception have a significant relationship with the deep learning approach with the t-value is 7.646 and p-value = 0.000. When we test the relationship between negative perceptions and the surface approach, the result also shows a significant relationship with a t-value 7.637 and p-value of 0.000. Thus, both hypotheses H_{1a} and H_{1b} were supported. Both results indicate that students who had positive perceptions on accounting were more likely to adopt a deep approach, while students who had negative perceptions on accounting were more likely to adopt a surface approach. The results are consistent with previous literature which found that positive perceptions of the learning environment are related to the deep approach to learning, whereas negative perceptions are associated with the surface approach (Kreber, 2003; Lawless & Richardson, 2002; Parpala et al., 2010; Sadlo & Richardson, 2003). Coertjen et al. (2016) highlight that if students perceive that courses are interesting and relevant, if they are provided with constructive feedback and if they receive support from other students, they are more likely to show a higher level of deep approach and organized studying. In contrast, if they have low perceptions of these factors, it increases the chances of students adopting a surface approach.

The result also indicates that there is no significant influence existing between surface and deep with the use of mobile apps. Therefore, H_{2a} and H_{2b} were not supported. It shows that students cannot percept the role of mobile apps as the teaching and learning method using mobile apps is not formally introduced as one of the teaching and learning methods in Malaysian higher learning institutions. Even though the role of mobile apps

has been acknowledged by previous research as one of the additional tools that can help the teaching and learning process (King, 2016; Mohammad, 2016), the importance of this tool in the teaching and learning process in Malaysia is still questionable. The result may indicate that higher learning institutions in Malaysia still rely on traditional methods of teaching and learning processes. Students may use mobile apps for the purpose of social media, games or others. Thus, our study proposes that higher learning institutions in Malaysia should take the initiative to introduce mobile apps as one of the teaching and learning methods which can hopefully assist students to enhance their learning performance as far as benefits of mobile apps is concerned. The insignificant result also indicates that the teaching and learning process in Malaysia is still exam oriented. Thus, students may not rely on other teaching and learning methods as their focus is just to pass the examinations.

CONCLUSION

The aim of this study was to examine the effect of students' perceptions on their learning approaches. The results support that there is significant relationship between students' perceptions of accounting and their approaches to learning. The test indicates that positive perceptions lead to deep approaches to learning accounting. Meanwhile, negative perceptions lead to surface approaches of learning. This paper also documented students' perceptions on the role of mobile-apps technology for learning accounting. To achieve this, a broad interpretation of its application on students' learning was analysed. This study provides insignificant results for both surface and deep learning in relation to the role of mobile apps. The insignificant result might provide explanations that students cannot perceive the role of mobile apps in the teaching and learning methods. This is because using mobile apps is not formally introduced as one of the teaching and learning methods in Malaysian higher learning institutions even though the role of mobile apps has been acknowledged by previous research as one of the additional tools that can help the teaching and learning process. The result may indicate that higher learning institutions in Malaysia still rely on traditional methods in the teaching and learning process. The findings of the study provide a view that higher learning institutions in Malaysia should be very proactive and take the opportunity of technological advancements in education in

line with the Industrial Revolution 4.0 by introducing mobile apps as one of the teaching and learning methods. As the accounting landscape is changing rapidly, there is call for accounting educators to rethink the strategies to embrace 21st century technology and prepare the students for transforming the accounting profession in the future. The curriculum needs to be redesigned to accommodate this issue which can optimistically assist students to heighten their learning executions as far as benefits of mobile apps is concerned.

Our study provides implications to accounting educators to design and implement educational programmes that could attract non-accounting students to learn accounting subjects and, hence, contribute to the development of accounting skills. Based on the findings, negative perception is one of the factors that contribute to surface approaches in learning accounting and positive approaches can contribute to deep approaches in learning account approach, there approach is associated with enhancing students' performances rather than the surface approach, there has been a call for education reform by educators to develop learning environments that motivate students to move away from negative perceptions. The result of this study also stimulates accounting educators to design pedagogical methods that can instil positive perceptions among non-accounting students that accounting is fun, enjoyable, interesting and important to study such as by introducing mobile-apps technology in the teaching and learning process. Such reform is timely with the global business environment that requires non-accounting graduates to be financially literate. Kukulska-Hulme (2005) provides reasons underpinning the use of mobile technology in education as to improve access, explore the potential for changes in teaching and learning, and an alignment with wider institutional or business aims.

The limitations of this study are it only focussed on the 3P model which are perceptions, process and products. Future research may extend on a 4P model which entails presage, perceptions, process and products. Thus, future research may investigate the effects of both surface and deep approaches to learning accounting on students' performances. In addition, this study only focussed on the effect of the 3P model on non-accounting students. Future research may compare the model on both accounting and non-accounting students. Future research may include other variables such as workload, supportiveness, clarity of goals and independent study

to increase generalization. Furthermore, this study was conducted only in one of the public universities in Malaysia which is Universiti Teknologi MARA. Future research may extend the study to other public universities in Malaysia and compare the results for generalization.

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