

# **Competition-based Learning Strategy of the Online Introductory Accounting Quiz for Non-accounting Majors**

Afaf Izzati Nafhah Radzi<sup>a</sup>, Dayang Nazari Awang Drahman<sup>b</sup>, Corina Joseph<sup>c</sup>,  
Mariam Rahmat<sup>d</sup>, Khadijah Suria<sup>e</sup>

*a,b,c,d,e Faculty of Accountancy, Universiti Teknologi MARA, Cawangan Sarawak,  
94300 Kota Samarahan, Sarawak, Malaysia  
Corresponding Author: izzati901@uitm.edu.my*

**To cite this article (APA):** Radzi, A. I. N., Awang Drahman, D. N., Joseph, C., Rahmat, M., & Suria, K. (2020). Competition-based Learning Strategy of the Online Introductory Accounting Quiz for Non-accounting Majors. *International Business Education Journal*, 13(1), 83-94. <https://doi.org/10.37134/ibej.vol13.1.7.2020>

**To link to this article:** <https://doi.org/10.37134/ibej.vol13.1.7.2020>

## **Abstract**

In colleges and universities, competition-based learning strategy is one of the ways used by instructors to overcome students' challenges in their learning process. An investigation on the non-accounting major students' perception on participating in the online accounting quiz competition for the Introduction to Financial Accounting and Reporting course has been carried out. The questionnaire was specifically developed and distributed to students from the Diploma in Computer Science, Diploma in Public Administration, Diploma in Tourism Management and Diploma in Office Management and Technology programs of Universiti Teknologi MARA, Sarawak Branch, who underwent the course in Semester March 2018. Descriptive statistics were performed to achieve the objective of this paper. Overall, the respondents and participants have mixed feelings that the online quiz was effective for learning in an accounting course. The Competition-based Learning strategy explains that the non-accounting students intend to get the certificate from the involvement in the online quiz competition. The limitations and future research opportunities are also provided in this paper.

## **Keywords:**

Competition-based learning, accounting course, non-accounting majors

## **INTRODUCTION**

At present, lecturers and learners in colleges and universities are facing several shortcomings in learning and teaching. One of these shortcomings is students' lack of confidence in learning process, which may cause lack of willingness to cope with problems in their future profession. On the contrary, educators are engaging in conflict to face the rapid development in technology for teaching objectives and directives to adopt new teaching techniques (Joseph and Rahmat, 2018). Educators need to be ready to cope with modern technology and try to learn and master innovative educating mechanism for teaching purposes (Joseph and Rahmat, 2019).

In line with the market requirement, the Indented Learning Outcomes (ILOs) that are specified in the study program have been designed to "focus on the concept of motivation, self-esteem, problem solving, team work, solving real-world problems, competition, and innovation" (Issa et al., 2014, p. 2). ILOs are included in a few learning models as stated by Issa et al. (2014), for example, Problem-Based Learning (PBL), competition, networked learning, collaborative learning, and active learning.

Competition-based Learning (CBL) includes a group of students in an open-ended task that brings to mind some problems which students may face at the workplace. Nevertheless, the performance is being evaluated on the final completion of the task assigned in the course as a comparison to other groups. Competitive-based learning proposes that learning depends on the competition results (Johnson et al., 1985). In addition, CBL implements a reward system upon the completion of the task assigned (Sukiman et al., 2016). In CBL, students can also improve their soft skills, as well as critical thinking and problem-solving skills (Khairnar, 2015).

CBL is considered as a significant area of study in higher education. Nonetheless, there is minimal ideas in relation to the nature and needs of non-accounting students. The main part of this paper is to meet the various needs of these students through CBL.

Previously, the Higher Education learning only involves lectures, tutorials, practical work and others (Joseph and Rahmat, 2018). However, due to pressure from the external environment, such as, market requirement and professional bodies, there is a need to change in a way of sharing technical information, for example in accounting course. As part of the change of higher education system, introductory accounting was frequently introduced to wide range of students' cohorts as part of their first-year subject. Thus, it is common for students to enroll the introductory accounting subject. Due to the changes, certain issues arise. These include bigger class size, bigger cohorts of students, reduced number of contact hours, higher volume of assessments, frequent assessments and professional accreditation (University of West England, 2003).

These issues were commonly cited as the cause of poor students' determination and poor attendance (University of West England, 2003). In addition to the issues, the nature of the subject was perceived to make the situation worse. This is due to the perception of non-accounting students that accounting subject is a challenging and demanding subject (University of West England, 2003; Hunt et. al., 2004). They also find it difficult to see the relevancy of accounting subject to their enrolled program.

Meanwhile, educators expressed that the sheer group of students caused problems. The vital issues identified were educators have lack of knowledge regarding their students' background and the importance of accounting to the respective programs. Educators also felt that there was lacking understanding of students' entry knowledge on accounting and the manner by which this may influence their teaching style. Educators also felt that the students have lack of understanding in accounting knowledge upon entry and how this may influence their teaching style.

In this paper, the FAC\_QUIZ.COM learning activity is conducted via the two stages quiz competition of first accounting course (FAC) i.e. Introduction to Financial Accounting and Reporting (ACC 106) among non-accounting students from several faculties in Universiti Teknologi MARA, Sarawak branch. This learning activity may potentially overcome the deficiencies of non-accounting students that have the tendency to perceive high level of difficulty in learning the first accounting course. The objectives of conducting the FAC\_QUIZ.COM learning activity are:

- 1) To build analytical skills among non-accounting students.
- 2) To improve the level of competency in accounting among non-accounting students.

- 3) To enable non-accounting students to apply accounting theories and knowledge to the real competitive situation.
- 4) To instil non-accounting students' interest in accounting subject.

In this paper, the objective is to examine the participants' perception of the first accounting course online quiz for non-accounting majors as a preparation for the final round quiz.

## **SIGNIFICANCE OF THE PROJECT**

The FAC\_QUIZ.COM quiz competition is a unique learning activity for non-accounting programs in Universiti Teknologi MARA (UiTM) which is usually conducted for English and Mathematic courses. This is because CBL is mostly conducted in engineering, computer programming and science-based programs. The outcome of this learning activity assists in implementing strategies for enhancing teaching and learning the first accounting course (FAC) i.e. Introduction to Financial Accounting and Reporting (ACC 106). The online preliminary round questions will be shared and uploaded on the i-learn and Youtube to facilitate the preparation of future quiz competition. The project aims to support the identification and development of more effective teaching and learning strategies within the introductory accounting curriculum. This is implemented throughout the creation of a shared community of experience and supported by a more informed understanding of how students learn introductory accounting. This paper also contributes to the literature on students' experiences of learning introductory accounting.

## **LITERATURE REVIEW**

First accounting course was introduced as part of the course that non-accounting students should complete in certain major such as hospitality and business administration. However, educators face difficulties to attract students' attention and create interest. This is mainly due to students' perception towards accounting.

A significant number of studies were conducted to address students' perceptions upon accounting. Darin (2017) revealed that non-accounting student perceived accounting as daunting and a difficult subject. On the other hand, Cohen and Hanno (1993) found that students perceived accounting to be too numerical and boring. While, other students associate accounting as unexciting, dull and suffocating (Tan and Laswad, 2005, Albu et al., 2011).

Geiger and Ogilby (2000) found that the perception of students towards accounting changes over the semester. Accounting majors' perception towards accounting are more positive than non-accounting majors but both showed a negative perception at the end of the semester. The finding showed that there is an indication of boredom with an accounting course at the end of the semester. Similarly, Tan and Laswad (2006) found accounting majors and non-accounting major have different perceptions towards accounting. This matches with Hunt et al. (2004) who stated that there was a negative perception of accounting surrounding non-accounting individuals.

According to Wells (2009), people tend to gather information on a 'need-to-know basis' and then make a generalization out of it. This is what happened in the case of the negative perceptions of accounting. As the world is constantly changing, it seems that the

negative perception imposes on accounting may remain the same. In order to attract non-accounting students' interest in accounting, educators should find a motivating factor which can influence students to be more active in learning accounting. This is because one of the factors that influence students' performance is motivation (Zhou, 2015). Students' motivation can be either influenced by intrinsic or extrinsic and other factors. For instance, an accomplishment of goal can give a positive impact on students' motivation and performance (Bipp and Van Dam, 2014). Besides that, the use of competitions helps to encourage students' desire to improve on their learning (Becker, 2001).

Previously, an educator usually controls the instructional process and they tend to emphasize on factual knowledge (Wan Jusoh and Ahmad, 2016). The conventional lecture approach in the classroom is less effective in the teaching and learning process. The teacher spends a significant amount of class time on theoretical discussion. This situation will provide a false sense of security where the students will feel that they will always be provided with all the information and do not have to find information on their own (Caroll, 2013). Based on previous studies, it is proven that students' achievement depends on creative teachers who able to find various teaching methods (Rao, 2013). The educator must ensure that the students enjoy the lesson as the enjoyment usually may lead to better understanding and better retention.

A competition can be defined as a contest between individuals or groups to reach a common goal that cannot be shared (Issa et al., 2014). Cooperative goals make students take better care of their responsibilities and tasks for the sake of their groups (Cantador and Conde, 2010; Yu et al., 2002; Ediger, 2000). CBL can be an innovative tool in the teaching and learning method that is able to attract the students and make them enjoy learning. Competition adopted in learning inspired students' interest and enabled them to focus and understand the course that they are taking (Lei et al., 2016). According to Zhang et al. (2019), the competition develops students' competencies in acquiring and applying knowledge, experimental skill, problem solving, communication and teamwork.

Joseph and Rahmat (2019) also found that mind mapping video competition was effective for teaching and learning. According to Issa et. al. (2014), CBL will change traditional course work into new learning style that can enhance students learning experience, hence can boost the outcome of learning that still in line with the objectives of the curriculum. CBL is mostly conducted in computer programming, engineering and science-based programs (Joseph and Rahmat, 2018).

Besides that, today's demanding working environment requires future employees to possess a certain level of soft skills (Sukiman et al., 2016) and this can be achieved by enriching teaching methodology through CBL competition. Soft skills that can be attained through CBL competition are creative thinking, critical thinking, problem solving skill (Khairnar, 2015) and peer communication skill (Chen, 2019). Meanwhile, Chen and Chui, (2016) found that CBL was able to enhance student engagement, creativity and learning accomplishment.

Joseph and Rahmat (2018) examined the perception of students on using the competition-based learning winning video as a pedagogical tool in the accounting course. The questionnaire was distributed to accountancy students that took Advanced Financial Reporting II Course. The results indicate that the respondents agreed that the winning video from the CBL activity was effective pedagogical approach in learning Corporate Social

Responsibility (CSR) topic. Research has been conducted in order to investigate the perception of students towards education game for developing pervasive skills in accounting students (Viviers et al., 2016). Result found that students agreed that the game was an effective teaching method for developing pervasive skills (Viviers et al., 2016).

Hanafi et al. (2018) conducted a study to identify factors affecting the adoption of mobile application in the classroom. The study was examined by using three technology acceptance constructs, which were a relative advantage, mobile learning acceptance and intention to use mobile learning. Hanafi et al. (2018) found that the respondents agree in utilizing mobile learning approach and it will give a high impact on the current teaching and learning process in the campus. According to Al-Shibi et al. (2018) technology has improved the students' skill and their learning patterns. Technology revolution has changed the method of learning as students are becoming more advance in technology.

## **METHODOLOGY**

This study involved a survey method to examine the participants' perception of the first accounting course online quiz for non-accounting majors as a preparation for the final round quiz through competition-based learning using 5-point Likert scale (1= strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, and 5 = strongly agree). A set of self-created questionnaires was designed based on the program outcome for the ACC 106 course, in line with the Outcome Based Education System, Ministry of Higher Education, Malaysia. The online quiz was participated by students who enrolled for the ACC 106 course, for semester March –July 2018. A total of 63 participants took an online quiz in the preliminary round of this competition. The total participants in the competition consists of 27 students from Diploma in Computer Science, 4 students from Diploma in Public Administration, 2 students from Diploma in Tourism Management and 30 students from Diploma in Office Management and Technology from Universiti Teknologi MARA, Sarawak Branch.

The size and non-random selection of sample do not justify the use of any statistical test. Hence, all findings reported will be descriptive but sufficient to achieve the objective in this paper. The flowchart in implementing the FAC\_QUIZ. COM learning activity is depicted in Figure 1.

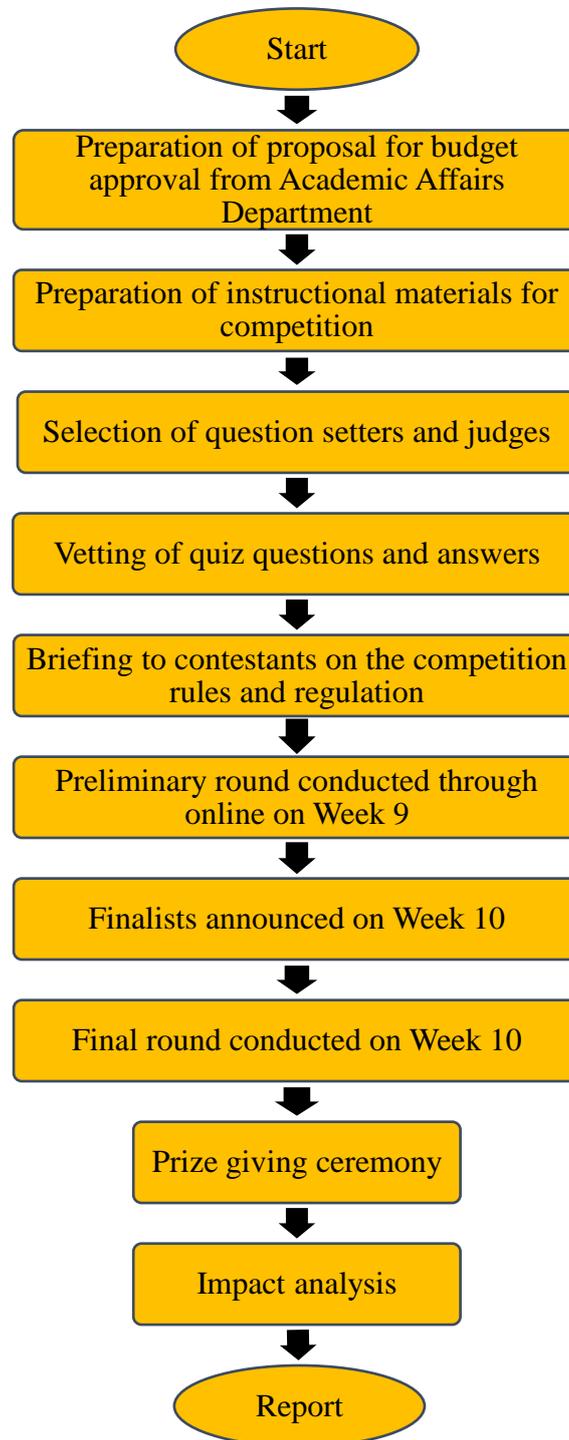
## **RESULTS AND DISCUSSIONS**

The respondents consisted of 54% female and 46% male students. A reliability analysis was carried out on all 14 items tested in the questionnaire prepared using Cronbach's Alpha. Table 1 shows the acceptable reliability value of  $\alpha = 0.918$ . This indicates that there is a high level of internal consistency of all the items.

**Table 1. Cronbach's alpha**

<b>Cronbach's Alpha</b>	<b>Cronbach's Alpha Based on Standardized Items</b>	<b>N of Items</b>
.918	.918	14

The results of the perception of non-accounting students in UiTM Sarawak Branch in participating the preliminary round of quiz competition for the introductory accounting course are presented in Table 2.



**Figure 1: The Implementation of the FAC QUIZ.COM learning activity**

**Table 2. The perception on participating in the first Accounting course (Fac) quiz competition**

NO.	ITEMS	Strongly disagree (%)	Disagree (%)	Mixed feeling (%)	Agree (%)	Strongly agree (%)
1	I like Accounting course.	4.76	12.70	49.21	26.98	6.35
2	I am happy participating in the Accounting course quiz competition.	1.59	12.70	46.03	38.10	1.59
3	I make a full preparation for this Accounting course quiz competition.	3.17	26.98	34.92	33.33	1.59
4	I discuss with my team members preparing for this Accounting course quiz competition.	7.94	19.05	31.75	38.10	3.17
5	I want to be selected to the final round of the Accounting course quiz competition.	7.94	23.81	47.62	17.46	3.17
6	I consult my lecturer before the Accounting course quiz competition.	6.35	23.81	28.57	39.68	1.59
7	I want to get more exposure by participating in the Accounting course quiz competition.	4.76	20.63	31.75	38.10	4.76
8	I want to get the certificate of participation out of this Accounting course quiz competition.	3.17	6.35	23.81	42.86	23.81
9	I get full support from friends for participating in the Accounting course quiz competition.	1.59	9.52	38.10	41.27	9.52
10	The learning materials provided by my lecturers are sufficient to equip me to prepare for the Accounting course quiz competition.	0.00	11.11	17.46	49.21	22.22
11	I have sufficient time to prepare for the Accounting course quiz competition.	4.76	17.46	34.92	34.92	7.94
12	I like competing with students from other programs.	4.76	23.81	41.27	23.81	6.35
13	I can answer and think under pressure in the Accounting course quiz competition.	7.94	26.98	34.92	25.40	4.76
14	I want to participate in the Accounting course quiz competition in the future.	9.52	17.46	47.62	22.22	3.17

Table 2 reveals that more than 40% of the respondents agree that:

- They discuss with team members in preparing for this Accounting course quiz competition.
- They consult with their lecturer before the Accounting course quiz competition.
- They want to get more exposure by participating in the Accounting course quiz competition.
- They want to get the certificate of participation out of this Accounting course quiz competition.
- They get full support from friends for participating in the Accounting course quiz competition.
- The learning materials provided by my lecturers are sufficient to equip me to prepare for the Accounting course quiz competition.

- They have sufficient time to prepare for the Accounting course quiz competition.

However, more than 40% of the respondents have mixed feelings that:

- They like accounting course.
- They are happy participating in the accounting course quiz competition.
- They want to be selected to the final round of the accounting course quiz competition.
- They like competing with students from other programs.
- They want to participate in the accounting course quiz competition in the future.

Competition may give advantage in terms of interactivity, collaborative work inside the group, active participation, challenge versus duties, and motivation for the students to explore their own topics (Burguillo, 2010). However, Vandercruysse et al. (2013) stated in their study that the presence of competition had no effect on the students' motivation, but competition was related to students' post-experimental perceived competence, irrespective of whether students were instructed to be working in a learning or gaming environment. Collaborative based learning will help the students to share knowledge as the aims of this learning method is to maximize collaboration among students (Caroll, 2013). More than 40% of the students agree that they discussed among themselves before the quiz, hence the quiz competition did encourage collaboration among the students. In addition, the respondents want to get more exposure by participating in the quiz competition. According to Khainar (2015), competition-based learning can help the students to improve their soft skills, critical thinking skills and problem-solving skills. Through the competition, students were exposed to learn how to think from different angles and to look beyond the textbook.

Since the preliminary round were made compulsory to all respondents, wanting to get the certificate of participation and support from friends can be a motivation for them to participate in the competition although they have mixed feelings in liking the accounting course. Students are normally interested to join activities that provide rewards, for example, prizes and certificates. A certificate is a document that can be used by the students for job hunting and can add value to their resume. Employers normally will verify candidates' skill, knowledge and experience through certifications. Theoretical knowledge and formal skills acquired at the university studies should be supplemented by personal qualities such as communication skills, leadership and the ability to work in a team. Many employers consider personal qualities are more important than theoretical knowledge and formal skills (Gruzdev et al., 2018). One of the reasons that motivate students to participate in the competition was because they gained support from friends. The competition will encourage teamwork and students need to help each other to win the competition. According to Flashman (2012) friends play an important role in the educational process because they provide the support that can either encourage or discourage academic achievement.

It was perceived that non-accounting students would not take accounting course if it was not necessary to fulfill their business core (Malgwi et al., 2005). This support the perception statement of "I like accounting course". Malgwi et al. (2005) also stated that a significant number of non-accounting majors still see it as overly uninteresting, too demanding, and hard to comprehend relative to similar courses in the business core. This is shown by the result of the statement "They are happy participating in the accounting course quiz competition". The results also indicate that the respondents lack of motivation in participating in the competition either selected to the final round or competing in the future. Non-accounting students consider accounting subject as irrelevant to their course (Malgwi, 2006). Muda et al. (2013) examine the contributing factors of failure in the introductory

accounting course. The finding revealed that non-accounting students lack the motivation to study the course as the nature of the accounting course is different from their major course.

## **CONCLUSION**

The objective of this paper is to examine the participants' perception of the first accounting course online quiz for non-accounting majors as a preparation for the final round quiz through competition-based learning. It appears that the CBL explains the attempt of non-accounting students made to get the certificate from the involvement in the online quiz competition. The finding revealed that more than 40% of the respondents agreed to join this competition because of the certificate of participation. In addition, the competition activity is in line with all program outcomes specifically designed for the course. It is anticipated that the development of this framework will support a more systematic approach to research and development within introductory accounting.

This study is not without any limitation. The study only covers one cohort from Semester March-June 2018. Hence, it is not possible to make a comparison across the cohorts. Future studies may consider examining the effectiveness of FAC\_QUIZ.COM and its impact on students' performance in final examinations. Furthermore, the performance of students is very much depending on the cohort in a semester's intake. Future studies can consider examining the relationship between demographic characteristics of respondents, for example, gender and academic performance with the perceived benefits of participating in the FAC\_QUIZ.COM.

It would be possible to conduct semi-structured or in-depth to further gauge the understanding on the impact of FAC\_QUIZ.COM on students' learning process. These areas include the perspectives of behaviour, group learning ability and problem-solving skills. Feedback from students could also provide insight to possible CBL problems in relation to students' learning process. The FAC\_QUIZ.COM is a unique learning activity for the non-accounting program at Universiti Teknologi MARA, which is commonly used in science and technology-based programs, for example, engineering, mathematical education, and computer science.

## **REFERENCES**

- Albu, C.N., Albu, N., Girbina, M.M., & Sandu, M.I. (2011). A Framework for the Analysis of the Stereotypes in Accounting. *International Journal of Social, Educational, Economic, Business, and Industrial Engineering* 5(5). Retrieved April 28, 2016, from <http://waset.org/publications/8619/a-framework-for-the-analysis-of-the-stereotypes-in-accounting>
- Al-Shibi, S.S., Abushakra, A., & Khan, F.R. (2018). Perception of Academic Staff over their Career Due to Technology Implementation at Sohar University. *International Journal of Management, Innovation & Entrepreneurial Research* 4(1): 16-24. <https://doi.org/10.18510/ijmier.2018.414>
- Becker, K. (2001). Teaching with games: the minesweeper and asteroids experience. *Journal of Computing Sciences in Colleges* 17(2): 23-33.

- Bipp, T., & Van Dam, K. (2014). Extending hierarchical achievement motivation models: The role of motivational needs for achievement goals and academic performance. *Personality and Individual Differences* 64: 157-162.
- Burguillo, J.C. (2010). Using game theory and competition-based learning to stimulate student motivation and performance. *Computers & education* 55(2): 566-575.
- Cantador, I., & Conde, J.M. (2010). A simple e-learning system based on classroom competition. *Lecture Notes in Computer Science* 6383/2010: 488-493
- Caroll, C. (2013). Competition Based Learning in the Classroom. *American Society for Engineering Education*. Retrieved from: [www.asee.org/public/conferences/20/papers/6233/download](http://www.asee.org/public/conferences/20/papers/6233/download).
- Chen, C. (2019). The impacts of peer competition-based science gameplay on conceptual knowledge, intrinsic motivation, and learning behavioral patterns. *Education Tech Research Dev* 67: 179–198.
- Chen, C.H., & Chiu, C.H. (2016). Employing intergroup competition in multitouch design-based learning to foster student engagement, learning achievement, creativity. *Computers & Education* 103: 99-113.
- Cohen, J., & Hanno, D.M. (1993). An analysis of underlying constructs affecting the choice of accounting as a major. *Issues in Accounting Education* 8(2): 219.
- Darin, B. (2017). The Perceptions of Accounting: What Do You Think? (Unpublished dissertation). Bryant University. doi: [https://digitalcommons.bryant.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1012&context=honors\\_accounting](https://digitalcommons.bryant.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1012&context=honors_accounting)
- Ediger, M. (2000). Competition versus cooperation and pupil achievement. *College Student Journal* 34(1): 14–22.
- Flashman, J. (2012). Academic achievement and its impact on friend dynamics. *Sociology of Education* 85(1): 61-80.
- Geiger, M.A., & Ogilby, S.M. (2000). The first course in accounting: students' perceptions and their effect on the decision to major in accounting. *Journal of Accounting Education* 18(2): 63-78.
- Gruzdev, M.V., Kuznetsova, I.V., Tarkhanova, I.Y. & Kazakova, E.I. (2018). University graduates' soft skills: the employers' opinion. *European Journal of Contemporary Education* 7(4): 690-698.
- Hanafi, H.F., Zainuddin, N.Z., Adb Wahab, M.H., & Ariffin, A.H. (2018). Technology Acceptance of a Novel Mobile Learning Application among University Undergraduates. *International Business Education Journal* 22(1): 16-24.
- Hunt, S.C., Falgiani, A.A., & Intrieri, R.C. (2004). The nature and origins of students' perceptions of accountants. *Journal of Education for Business* 79(3): 142-148.

- Issa, G., Hussain, S.M., & Al-Bahadili, H. (2014). Competition-based learning: A model for the integration of competitions with Project-Based Learning using open source LMS. *International Journal of Information and Communication Technology Education (IJICTE)* 10(1): 1-13.
- Johnson, R.T., Johnson, D.W., & Stanne, M.B. (1985). Effects of cooperative, competitive, and individualistic goal structures on computer-assisted instruction. *Journal of Educational Psychology* 77(6): 668 – 677.
- Joseph, C., & Rahmat, M. (2018). Exploring the Perception on using the Competition Based Learning Winning Video as a Pedagogical Tool in an Accounting Course. *International Journal of Academic Research in Business and Social Sciences* 8(2): 440–451.
- Joseph, C., & Rahmat, M. (2019). Factors Influencing the effectiveness of the Competition Based Learning (CBL) Activity among Accounting Undergraduates. *International Business Education Journal* 12(1): 1–14.
- Khairnar, C. M. (2015). Advance Pedagogy: Innovative Methods of Teaching and Learning. *International Journal of Information and Education Technology* 5(11): 869 – 872.
- Lei, J. H., Guo, Y. J., Chen, Z. i., Qiu, Y. Y., Gong, G. Z., & He, Y. (2016). Problem/case-based learning with competition introduced in severe infection education: an exploratory study. *SpringerPlus* 5(1): 1821. <https://doi.org/10.1186/s40064-016-3532-3>
- Malgwi, C.A., Howe, M.A., & Burnaby, P.A. (2005). Influences on students' choice of college major. *Journal of Education for Business* 80(5): 275-282.
- Malgwi, A.C. (2006). Discerning Accounting and Non-Accounting Students' Perceptions in the First Course in Accounting as a Proxy for Separate Course Delivery. *Global Perspectives on Accounting Education* 3(2006): 67-91.
- Muda, S., Hussin, A. H., Johari, H., Sapari, J. M., & Jamil, N. (2013). The Key Contributing Factors of Non-accounting Students' Failure in the Introduction to Financial Accounting Course. *Procedia –Social and Behavioral Sciences* 90: 712–719. <http://doi.org/10.1016/j.sbspro.2013.07.144>
- Rao M.S., (2013). Exploring “Meka's method” to achieve effective teaching and training outcomes. *Industrial and Commercial Training* 45(6): 362-368
- Sukiman, S.A., Yusop, H., Mokhtar, R., & Jaafar, N.H. (2016). Competition-based learning: Determining the strongest skill that can be achieved among higher education learners. *In Regional Conference on Science, Technology and Social Sciences (RCSTSS 2014)* (pp. 505-516). Springer, Singapore.
- Tan, L.M., & Laswad, F. (2005). Charting a course into accountancy. *Chartered Accountants Journal* 84(3): 59-61.
- Tan, L.M., & Laswad, F. (2006). Students' beliefs, attitudes and intentions to major in accounting. *Accounting Education: an international journal* 15(2): 167-187.

- University of West England (2003). Key issues in the teaching of introductory accounting and Towards a framework of support for. introductory accounting lecturers. A National Teaching Fellowship Project Introductory accounting: achieving relevance, interest and understanding. Retrieved from:  
<https://www2.uwe.ac.uk/faculties/bbs/bus/research/ntfs/interimreport.pdf>
- Vandercruysse, S., Vandewaetere, M., Cornillie, F., & Clarebout, G. (2013). Competition and students' perceptions in a game-based language learning environment. *Educational Technology Research and Development* 61(6): 927-950.
- Viviers, H.A., Fouché, J.P., & Reitsma, G.M. (2016). Developing soft skills (also known as pervasive skills) Usefulness of an educational game. *Meditari Accountancy Research* 24(3): 368-389.
- Wan Jusoh, W.N.H., & Ahmad, S. (2016). iMindMap as an innovative tool in teaching and learning accounting: an exploratory study. *Interactive Technology and Smart Education* 13(1): 71-82.
- Wells, P.K. (2009). Perceptions of accounting and accountants: an investigation into how and why these perceptions were formed (Doctoral dissertation, Auckland University of Technology).
- Yu, F.Y., Chang, L.J., Liu, Y.H., & Chan, T.W. (2002). Learning preferences towards computerised competitive modes. *Journal of Computer Assisted Learning* 18(3): 341-350.
- Zhang, X., Ye, R., Hu, F., Zheng, Y., Gao, S., Zhuang, Y., Wang, Q. & Bai, Y. (2019). Learning from Competition: An Outcome-Based Introductory Activity for First-Year Biotechnology Undergraduates. *The American Biology Teacher* 81(7): 467-473.
- Zhou, M. (2015). Moderating effect of self-determination in the relationship between Big Five personality and academic performance. *Personality and Individual Differences* 86: 385-389.