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“Optimizing Innovation in Knowledge, Education and Design”

EXTENDED ABSTRACT



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Assalamualaikum warahmatullahi wabarakatuh,



First and foremost, I would like to express my gratitude to the organizing committee of i-Spike 2023 for their tremendous efforts in bringing this online competition a reality. I must extend my congratulations to the committee for successfully delivering on their promise to make i-Spike 2023 a meaningful event for academics worldwide.

The theme for this event, 'Optimizing Innovation in Knowledge, Education, and Design,' is both timely and highly relevant in today's world, especially at the tertiary level. Innovation plays a central role in our daily lives, offering new solutions for products, processes, and services. By adopting a strategic approach to 'Optimizing Innovation in Knowledge, Education, and Design,' we have the potential to enhance support for learners and educators, while also expanding opportunities for learner engagement, interactivity, and access to education.

I am awed by the magnitude and multitude of participants in this competition. I am also confident that all the innovations presented have provided valuable insights into the significance of innovative and advanced teaching materials in promoting sustainable development for the betterment of teaching and learning. Hopefully, this will mark the beginning of a long series of i-Spike events in the future.

It is also my hope that you find i-Spike 2023 to be an excellent platform for learning, sharing, and collaboration. Once again, I want to thank all the committee members of i-Spike 2023 for their hard work in making this event a reality. I would also like to extend my congratulations to all the winners, and I hope that each of you will successfully achieve your intended goals through your participation in this competition.

Professor Dr. Roshima Haji Said
RECTOR
UiTM KEDAH BRANCH



WELCOME MESSAGE (i-SPIKE 2023 CHAIR)



We are looking forward to welcoming you to the 3rd International Exhibition & Symposium on Productivity, Innovation, Knowledge, and Education 2023 (i-SPIKE 2023). Your presence here is a clear, crystal-clear testimony to the importance you place on the research and innovation arena. The theme of this year's Innovation is "*Optimizing Innovation in Knowledge, Education, & Design*". We believe that the presentations by the distinguished innovators will contribute immensely to a deeper understanding of the current issues in relation to the theme.

i-SPIKE 2023 offers a platform for nurturing the next generation of innovators and fostering cutting-edge innovations at the crossroads of collaboration, creativity, and enthusiasm. We enthusiastically welcome junior and young inventors from schools and universities, as well as local and foreign academicians and industry professionals, to showcase their innovative products and engage in knowledge sharing. All submissions have been rigorously evaluated by expert juries comprising professionals from both industry and academia.

On behalf of the conference organisers, I would like to extend our sincere thanks for your participation, and we hope you enjoy the event. A special note of appreciation goes out to all the committee members of i-SPIKE 2023; your dedication and hard work are greatly appreciated.

Dr. Junaida Ismail

Chair

3rd International Exhibition & Symposium Productivity, Innovation, Knowledge, and Education 2023 (i-SPIKE 2023)

HELLO ALOE: INTERACTIVE ACCOUNTING DECODED, ENTER THE REALM OF WONDER

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ABSTRACT

One of the fundamentals accounting knowledge that all students enrolled in accounting courses must understand is the accounting equation. When preparing ledgers and trial balances, financial statements with adjustments and financial statement analysis one would use their understanding of the accounting equation. Observations show that majority of the students had trouble comprehending on how to classify correctly items in the basic accounting equation that is assets, liabilities, or owner's equity. They are unable to differentiate between these items, which results in failure to master other accounting treatments. This has the effect of making students feel under pressure to learn accounting since they are unable to grasp the double entry accounting procedures. Thus, a model called the Assets, Liabilities and Owner's Equity (Hello ALOE) has been devised to aid in the teaching and understanding of this subject. For the purpose of educating students about accounting classification, this model is straightforward and simple to use. It is appropriate for both types of students, whether they are majoring in accounting or not. By employing both the left and right brain, this innovation also increases students' cognitive learning. In an interactive mode, students must match the provided visuals with the appropriate classification, such as the assets, liabilities, and owner's equity. In order to promote the educational revolution, Hello ALOE would make teaching and learning as enjoyable and engaging as possible. The Tic-Tac-Toe Fun Accounting Tools (T3FacT) and Tic-Tac-Toe Fun Accounting Tools 2 (T3FacT2) are a predecessor to Hello ALOE. In general, T3FacT and T3FacT2 are used to understand the concepts, identify correct classification of asset as well as liability and assist in the preparation of adjusted financial statements. In the future, it is intended to offer this innovation to all potential accounting students enrolled in fundamental accounting courses.

Keywords: Accounting equation, online game, interactive, accounting game

INTRODUCTION

Online or digital game-based learning models with effective teaching methods have received a lot of attention recently in academia. The practise of creating innovations in this field has grown in prominence. Numerous relevant studies have revealed that using online games for learning has a favourable effect on students' learning motivation and attitude (Tapingkae, Panjaburee, Hwang, & Srisawasdi, 2020; Yang, Chang, Hwang, & Zou, 2020). However, it is challenging to properly address students' problem-solving skills, applications, and thinking abilities in the classroom due to the traditional teaching methods.

Students must immediately learn the accounting's terminology and principles in order to assist their learning (Moncada & Moncada, 2014). Subsequently, the American Institute of Certified Public Accountants (AICPA) and the Accounting Education Change Commission (AECC) encourage accounting instructors to incorporate active learning opportunities and creative uses of technology into the curriculum, especially in the introductory accounting courses, in response to the need for change in accounting education (Fratto, 2011). Therefore, education must advance by focusing on a student-centered strategy that blends conventional teaching methods with the internet, social media, video and games to give students a rich and rewarding educational experience (Jaijairam, 2012). This will allow education to stay current.

The main objective of the Hello ALOE is to help students grasp the classification of the components of the basic accounting equation; assets, liabilities, and owner equity, by usingan engaging online game. Additionally, it seeks to keep students interested in the process of learning (Abd Rahim, et al., 2021). The needs of today's youth, often known as "digital natives" might be met in this direction by developing an interactive online applications using modern technology.

Problem Statement

Students taking basic accounting courses faced problems in understanding the classification of the basic accounting equation's components; Assets, Liabilities and Owner's Equity. For them, this classification is confusing and the topic seems to be quite complicated. The implication of not been able to classify these items correctly will lead to inability of the students to do a correct treatment of preparing the accounts and the financial statements. Furthermore, students in generation Z and gen Alpha welcome an interactive games tosupport their learning. Numerous studies in numerous fields have shown how effectively online games may be used in education (Abd Rahim, et al., 2021, Hsu & Wang, 2018; Sun, Chen, & Chu, 2018). Online games for education have advanced in the field of accounting. Nevertheless, the progress is still in its early stages (Özdoğan et al., 2018). As a result, this innovation is essential and timely for preparing educators and students for the teaching and learning of the digital age.

Research Objectives

In this study, there are three (3) research objectives as follows:

1. To understand the components of basic accounting equation.
2. To identify correct classification of items under Assets, Liabilities and Owner's Equity.
3. To assist in the preparation of Financial Statements.

This paper is organised as follows. The basic accounting equation and its elements are discussed in the section that follows. The rationale for the research methodology and conclusions follows this. The topic of novelty and commercialisation is then discussed further. The future innovations and conclusion are then outlined.

ACCOUNTING EQUATION

Accounting equation comprises of three (3) components. The components are Assets, Liabilities and Owner's Equity as shown in Figure 1.

Assets	=	Liabilities	+	Owner's Equity
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Figure 1. Accounting Equation

Assets refer to the resources owned by the business and are expected to provide present and future economic benefits to the business (Marzuki et al. 2022). Examples of items under assets are motor vehicle, building, land, fixed deposit, accounts receivable, bank, cash and inventory. As for the liabilities, it refers to the existing debts and financial obligations of the business to the outsiders (Marzuki et al. 2022). Some of the examples are loan from bank, accounts payable and bank overdraft. The owner's equity is the ownership claim on total assets which consists of four elements that are capital, revenue, expenses and drawings (Marzuki et al. 2022). The examples are capital, drawings of good and cash.

RESEARCH METHOD AND FINDINGS

Research Method and Sampling

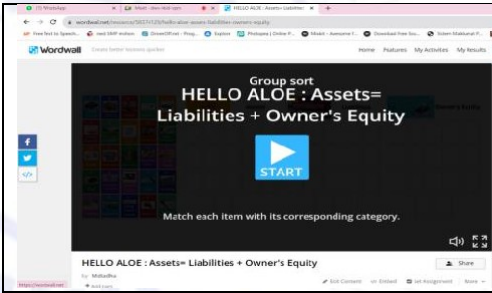
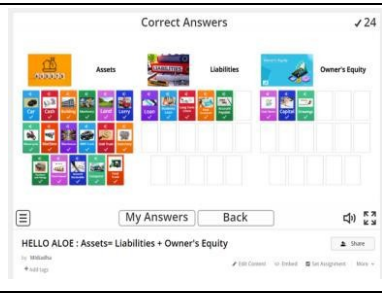
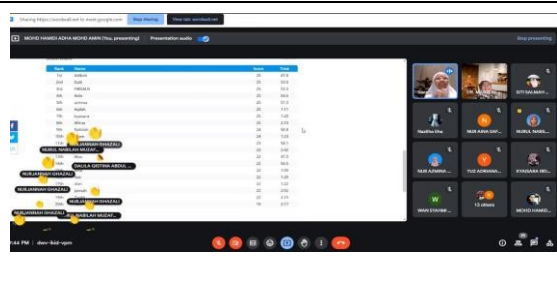
A self-learn interactive online accounting game has been developed to ensure that students can correctly identify all of the items in basic accounting equation. Kao, Yuan, and Wang (2023) conducted a pre-test on learning engagement using the game learning platform. In this study, a pilot test on four (4) lecturers. We ran a test group of 21 students who had previously studied about accounting equation and classification. Table 1 shows a screenshot of the Hello ALOE's activities.

Findings and Discussions

The game was completed by 21 participants in the allotted period of 3 minutes. Males accounted for 2 (9.5%) of them, while females accounted for 19 (90.5%). It was discovered that 15 students (71.4%) were accounting majors, whereas the remainder were not.

The employment of Hello ALOE in the teaching and learning process benefited both students and lecturers considerably. The ability of this game to provide instant analysis is its strongest feature. For example, once the students have completed answering the questions, an immediate result with their score will be displayed on their screen. Furthermore, the administrator's panel can automatically build a list of the top twenty players who submitted within the time allotted. The ranking is based on participants who scored the highest with quickest amount of time. As a result, the administration can review the students' performance more promptly. Thus, Hello ALOE is pursuing a revolutionary, cohesive and sustainable approach to teaching and learning.

Table 1. Hello ALOE's activities

	
Students are then asked to join online web-based game.	Once ready, students will start to answer the questions
	
The results will be generated immediately on the student's screen once the students submitted their answers.	Summary of results showing a list of the game's top twenty winners who can classify all items correctly in the fastest time are shared with the students.

It has been discovered that introducing game-based mobile learning into accounting classrooms might boost students' learning motivation. According to quantitative input from students, including mobile learning with games into accounting classrooms will enhance students' motivation to learn.

COMMERCIALISATION AND NOVELTIES

Commercialisation

There are four (4) possible efforts to commercialise Hello ALOE. Firstly, Hello ALOE has a wide potential users. Any institutes offering introductory accounting courses at the local or international level may find it advantageous. Secondly, Hello ALOE is an interactive online game application that is simple to apply. It provides flexibility for the students to access the game. The interface used in playing the game is easy, the students need to drag and drop the pictures of Assets, Liabilities and Owner's Equity to the respective components of accounting equation. Thirdly, Hello ALOE is practical to help the students to understand the knowledge on the classification of item under Assets, Liabilities and Owner's Equity. Students can practice multiple of times of Hello ALOE until they received the highest possible score. Lastly, Hello ALOE might improve students' academic achievement in fundamental accounting classes. This might be due Hello ALOE is capable to increase students' enthusiasm and engagement in learning throughout the class.

Novelties

There are seven (7) contributions of this innovation. Firstly, Hello ALOE adds to the body of knowledge in teaching and learning accounting. It offers educators an alternative to switch their teaching style in the classroom from conservative to a more sophisticated method. Secondly, Hello ALOE supports the need of Generation Z and Generation Alpha in learning. In particular, Hello ALOE employs information technology to develop a cutting-edge interactive online game for accounting education. Thirdly, Hello ALOE is capable to increase students' enthusiasm in learning accounting and maintaining their attention for the duration of the lesson. This innovation helps to improve students' understanding of the basic accounting equation components. Fourthly, Hello ALOE provides flexibility in terms of the game's medium, location and time of play. For instance, Hello ALOE can be played offline, online or in a hybrid format at any time or place. Fifthly, Hello ALOE is able to offer sufficient exercises for students. Students can attempt multiple times of Hello ALOE to achieve the highest possible score to master the knowledge. Next, Hello ALOE can be made available in multiple languages such as Mandarin and Bahasa Malaysia. Lastly, Hello ALOE includes the element of listening and speaking to enhance the students' learning process. Once the students click the picture on the game, the spelling of the picture will be displayed and the pronunciation can be heard.

FUTURE INNOVATION AND CONCLUSIONS

In the future, innovation in this area could be extended to include expanded accounting equation or other TOPICSs covered in basic financial accounting courses such as the treatment of double entry, identification of books of prime entry or the treatment of accruals and prepayments. Another option is to create a game with varying degrees of difficulty, such as basic, intermediate and advanced. This would increase the interest, and application of technology in the teaching and learning of fundamental accounting courses for aspiring professionals.

In summary, Hello ALOE would pave the way for the use of interactive online game in teaching and learning accounting. This innovation is suitable for students undertaking fundamental accounting courses.

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