

An Innovation in Teaching and Learning of Accounting Concept Using AccRoBa[©] Game Approach

Inovasi dalam Pengajaran dan Pembelajaran Konsep Perakaunan Menggunakan
Pendekatan Permainan AccRoBa[©]

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ABSTRACT

The creation of Accounting Royale Balls Game (AccRoBa Game Approach) is to support the learning environment of university students by embarking on the approach of 'learning through play' during learning and teaching process. Some lecturer feel that the most common problem on why students face difficulties to understand accounting subject is because they do not mastering the accounting equation especially the topic of revenue and expenses. Therefore, AccRoBa is a game specifically designed to assist students in understanding the element of revenue and expenses in accounting equation and help them to understand better about the journal entry. This study was conducted in a classroom and participated by 250 of non-accounting major students. In this game, the players are required to specify the journal entry and describe whether it is revenue or an expense from the transaction that appears on the given flash card. From the study, most respondents found the game to be beneficial and could be used as a learning tool in the classroom. Majority respondents also agreed that this game can help student to evaluate and classify the assets, liabilities, revenue and expenses easier. Furthermore, this game also encourages peer teaching and learning since it promotes participation and teamwork while students play the game. It is anticipated that the use of this game can alleviate and rejuvenate the learning styles in accounting subject. Since some students have difficulties to understand this subject clearly, hence AccRoBa Game Approach can be the catalyst for the educator to take it as an alternative to mitigate this problem.

Keywords: Accounting; equation; game; learning; number

ABSTRAK

Penghasilan permainan "Accounting Royale Balls" (Pendekatan Permainan AccRoBa adalah untuk menyokong persekitaran pembelajaran pelajar universiti dengan mengambil pendekatan 'belajar melalui bermain' ketika proses pembelajaran dan pengajaran. Hal ini kerana, sebahagian pensyarah merasakan bahawa masalah yang paling biasa mengapa pelajar menghadapi kesukaran dalam memahami mata pelajaran perakaunan adalah kerana mereka tidak menguasai persamaan perakaunan terutamanya topik Hasil dan Perbelanjaan. Oleh itu, AccRoBa adalah permainan yang direka khusus untuk membantu pelajar memahami elemen hasil dan perbelanjaan dalam persamaan perakaunan dan membantu mereka untuk lebih memahami topik Kemasukan Jurnal. Untuk itu, kajian ini telah dijalankan di dalam kelas dan disertai oleh 250 mahasiswa yang bukan mengambil subjek Perakaunan sebagai teras. Dalam permainan ini, pemain dikehendaki untuk menentukan kemasukan jurnal dan huraikan sama ada ia adalah hasil atau perbelanjaan melalui transaksi yang tertera pada kad yang diberikan. Hasil daripada kajian ini, kebanyakan responden berpendapat permainan ini memberi manfaat dan boleh digunakan sebagai alat bantu mengajar di dalam kelas. Majoriti responden juga bersetuju bahawa permainan ini boleh membantu pelajar untuk menilai dan mengklasifikasikan aset, liabiliti, pendapatan dan perbelanjaan dengan lebih mudah. Tambahan pula, permainan ini juga menggalakkan pengajaran dan pembelajaran bersama rakan sebaya kerana ia menggalakkan penyertaan dan kerja berpasukan ketika pelajar bermain permainan ini. Dijangkakan bahawa penggunaan permainan ini boleh meringankan dan memberi nafas baharu bagi kaedah pembelajaran dalam mata pelajaran Perakaunan. Oleh kerana sesetengah pelajar mempunyai kesukaran untuk memahami subjek ini dengan jelas. Oleh itu, pendekatan permainan AccRoBa boleh menjadi pemangkin kepada pendidik untuk menjadikan ia sebagai alternatif untuk mengurangkan masalah ini.

Kata Kunci: Perakaunan; persamaan; permainan; pembelajaran; nombor

INTRODUCTION

Learning the accounting subject involves the skills like measuring, processing, and financial communicating about the economic entity. In other word, accounting is a systematic process for identifying, recording, classifying, verifying, summarizing, interpreting and communicating the financial information. Additionally, accounting also involves mathematical functions and numbers that require one to be acquainted with calculation. Perhaps, these factors have made some of the students assume that accounting subject is difficult to be learnt and part of them also think that accounting is a killer subject. Therefore, because of their negative assumptions, students often feel anxious in learning accounting subject (Hermanson et al. 2011). Based on this scenario, it shows that, current accounting education needs an improvement in the teaching methods or the approaches taken in order to improve the learning and teaching experience. One idea that comes to mind is by applying the concept of 'learning through play' that embraces the use of game and simulation for the teaching and learning process. This is because, students nowadays show an increasing desire for hands-on activities. As a result, numerous faculties in various disciplines have added the simulations and other hands-on activities to the mix of classroom strategies (Lippincott & Pergola 2009; Gast & Leathan 2005; Sarason & Banbery 2004). Moreover, nowadays the trend that is shown by teenagers is that they are more interested in entertainment and leisure activities. Thus, by adding the entertaining element in the learning environment, especially for the accounting subject could encourage the students' to feel that learning accounting is interesting. Learning environments today need to adopt various creative teaching methods in order to adapt to the ever changing education landscape and advancement. The environment of 'learning through play' can support the increasing needs for instant satisfaction and entertainment (Nitkin 2011).

Every students have their own ways of learning which tend to depend on their personality cognitive processes and previous learning experiences (Riding & Rayner 1998). Many researchers and philosophers in their effort to define learning and to find the best way to improve them have come out with many learning theories. Theories like Behaviorism, Cognitivism, and Constructivism are designed to provide instructional strategies and techniques for facilitating learning process and to search for a foundation for intelligent strategy selection (Ertmer & Newby 2013). For example, in Behaviorism theory, it equates learning with changes whether in the form or frequency of observable performance. It assess the importance of the consequences of those performances and contends that responses that are followed by reinforcement (Ertmer & Newby 2013). Meanwhile, Cognitivism emphasizes on the acquisition of knowledge structure of students' learning processes and address

the issues of how information is received, organized, stored, and retrieved by the mind. Learning strategies such as instructional explanations, illustrative examples, demonstrations, and matched non-examples can be considered to be instrumental in guiding student learning under this theory. On the other hand, Constructivism is a theory that associates learning with creating meaning from experience (Ertmer & Newby 2013). According to Amineh and Asl (2015), Constructivism designates the way that the students can make sense of the material and how it can be used for effective teaching. This theory also implies that educators should consider what students know and allow their students to put their knowledge in to practice (Amineh & Asl 2015). Based on these theories, it enough to surmise that to include the element of entertainment in teaching and learning process can be considered as improvement and innovation in education pedagogy. Besides, learning is not passive and it require active process where learners should experience their understanding in new learning situation (Amineh & Asl 2015).

Previous research shows evidence that play can support learning through physical, emotional, social, and intellectual areas of development as well as learning in different content areas such as literacy and numeracy (Kennedy 2009). Thus, from this perspective, the playing activities can assist in learning environment and being adopted as one of the education methods. Hence, the use of games in education is not new; in fact it also comes with an enhancement of its functionality and following the technology advancement that can support the teaching and learning delivery methods and approaches (Oldfield & Slessor 2010). Study by several researchers such as Gregoryk and Eighmy (2009); Robinson (2006, 2007); Eisner (2004); Arhin and Johnson-Mallard (2003); and Young (2002) assert that learning styles, for example, traditional class format and based on lectures and problem sets is not enough in meeting the learning needs of current students. Hence, some changes and modifications are required in the learning styles that are able to meet with the current students' needs. For instance, by adding some creativity, it could give some added value in the learning process. Through the games and simulation, it could also promote the creativity and intellectual interaction among the players. Apart from that, it also encourages students' interest and participation during the learning process (Gamlath 2007). The learning process will be enhanced when the students can react progressively in the game session as well as improve their communication through interaction with others.

This paper provides an insight about the idea to convey the concept of "learning through play" as a vibrant learning process. The main objective for the creation of this game is to enhance the effectiveness of learning process in accounting subject. In this game, it applies the concept of journal entry where the students have to understand about the application of revenue and expenses

towards every transaction that occurs. It provides the opportunity for the students to increase their ability in understanding the accounting subject, particularly the application of journal entry. Students not only can enjoy the moment and have positive leisure time by playing the game, but the key is they can sharpen their knowledge in accounting.

GAMES SIMULATION AS NEW PEDAGOGY METHOD

The need for changes in student learning styles has drawn attention from several researchers. According to prior researchers such as Sudirman and Mohd Meerah (2013); Robinson (2007); Eisner (2004) also Arhin and Johnson-Mallard (2003), suggested that the changes in learning style that applying the use of games and simulations have advantages and is deemed important. Some researchers also found that, the application of games and simulations bring many benefits for the teaching and learning process. From Albrecht and Green (2008), they stated that simulation games can motivate students in a greater degree compare to the traditional settings; enhance their cognitive growth (recall of factual knowledge, improve problem-solving skills, apply concepts and principles); enhance affective learning; enable intensive practice in verbal and written communication; promotes flexible thinking and an adaptive response to a dynamic environment. Besides, the simulation games also can be played repeatedly either with the same or other participants, thus it support additional learning because of the dynamic nature of the game.

This is also supported by Hoffgan (2005) and Murphy (2005) point out that games and simulations turn students into active participants rather than passive consumers of information. These authors also find that the active engagement by students positively impacts learning and retention. On the other hand, Kechnal (1989) asserted that simulations can add an element of business reality to the classroom and can reduce issues of slacking that possibly arise from the use of traditional learning.

Meanwhile, Fowler (2006) in his research compares the use of traditional pedagogy with the use of simulations. He found that students who are actively engaged in learning through the use of simulation are better in the application of knowledge level about certain related subject compared to the students who use the traditional method. Other views about the advantages of the use of simulations and games in learning process were posited by Ashwin (2005), Kechnal (1989) and Hoffgan (2005) suggest that, despite reinforcing and extending content coverage of the subject in learning process, games can also provide opportunities to develop teamwork, collaboration, and improve interpersonal social skills. Other researchers such as Gosenpud and Washbush (1993) as cited in Gamlath (2007) observed that students that exposed to simulations scored better in test rather than

students taught using lectures and cases. From this point, it shows that the games and simulations have a positive impact in learning environment because students will understand better since they are having fun and enjoyable moment during their learning process.

Although there are many prior literatures mentioned about the practical use of games and simulation for learning process, but the implementation of the game in teaching and learning processes are not yet in broad use (Treher 2011). This situation occurs possibly because the current education system emphasize on the concept of teacher centered learning environment when students are involved in a fairly passive lecture-discussion format where the lecturer talks and most students listen (Albrecht & Green 2008). Therefore, the use of game and simulations in learning environment can be seen as additional tools that are important. According to Moursund (2007), a number of educators and educational researchers realized that games can be important component for both formal and informal education. Also asserted in Breuer and Bente (2010), the idea of using games other than fun was formulated in the book "Serious Game" by Clark C. Abt (1975). Within this context, Breuer and Bente (2010) clarified that a game is not only for amusement and fun purposes, but it can be embedded with the element of education involving the activities that educate or instruct, and thereby imparting knowledge or skill.

Many researchers also have studied the impact of using games in education. For example, Gamlath (2007) found that students who were taught using simulation games enjoyed their courses more than those using the traditional approach. He also added that, prolonged exposure to a game-based learning environment resulted in noticeable shifts in attitude and behavior where it is mainly motivational in nature. Shanklin and Ehlen (2007) on the other hand uses Monopoly board game as a tool to explain the introductory to financial accounting instruction. They suggested that the use of game such as Monopoly in the education courses able to facilitates a better learning attitude towards the material and increases the chance of student success.

Meanwhile, Dolati and Mikaili (2011) conducted a study to assess the instructional games on facilitating students' vocabulary learning. They found that games has the important and determine role in teaching vocabularies to the language learners, as it was not possible as well as learning with just repetition and memorizing methods. The game also has the potential to be as an educational tool for literary training, where it is able to motivate and engage learners especially the quiet and passive ones, to involve in the whole learning process (Dolati & Mikaili 2011). Therefore, using game as a teaching tool is able to show enhancement in learning environment that includes social and practical dimensions of learning (Kirkland & O'Riordan n.d.) and nurturing positive learning behavior (Chin & Zakaria 2015). Hence, with various notions of these researchers, it is proven that games support the

learning environment by including interactive methods of teaching, personal, social and practical dimensions of learning.

AN INTRODUCTORY ACCOUNTING ROYALE BALLS GAME (ACCROBA-APPROACH)

The objective and purpose of this game is to initiate other creative methods in learning accounting subject to allow the “learning through play” environment by using games. The creation of this game is mainly driven by the effort to attract students and improve their perceptions that learning accounting is fun and enjoyable. Furthermore, this game emphasizes the accounting concept and classification that can train students to master the journal entry of revenue and expenses from the transactions through the exercises included in this game. It was designed as a tool that can help students to improve their performance in learning accounting. The idea to make this game into reality initially comes from the experience of the researchers as lecturers who taught accounting subject. Based on our experience, the students have the weaknesses in certain part of accounting subject whereas to rely on traditional teaching and learning process in class is not sufficient enough to educate students and make them absorb the whole content.

Therefore this game was initiated to provide a vibrant learning environment where the students can enjoy learning accounting subject as well as having fun while playing the game. Furthermore, Treher (2011, p. 9) also suggest that “we need to challenge the current bias in many educational settings against designing and using games. Games are useful, effective, and enjoyable for all ages. The games provide many educational and teaching benefits and have proven their value when designed appropriately for learning.” Besides, teenagers nowadays are eager to try new things especially if it has the element of entertainment (Mat Dangi et al. 2016).

To make the game more fascinating, we present the items in this game with a unique name. It is also as a means to attract people and get them interested about the game. The game contains several items namely revolving container called the Spinner of death, Royale flash cards of revenue and expenses, small balls with a printed number on it and the replica of monies called as the Royale cash notes, an hourglass, Royale wallet, 3×2 Royale table, journal entry card, trail balance card, Royale pen, eraser, Valley of death and Forest of sorrow. This game also comes together with the game aid tools consist of Royale ball circle model and the Royale ball access gate. This game aid tools were designed as a reference for the players where it presents a simplified formula of accounting equation. The game can be played by four players’ altogether where three players will play the game and one player will act as a banker or controller of the game.

GAME SETTINGS AND PLAYING METHODS

To start the game, all players will need to roll out the dices in order to determine their play turn and the highest number will go first. Players also need to determine who will become the banker or controller of the game. First, all the 90 balls with a number printed on it should be placed inside the revolving container. The player will press the key on the entry hole where it can spin the revolving container. The balls will automatically come out by turning the crank. Each ball will be randomly drawn out from the revolving container and the players will receive the card based on the printed number on the balls. The card shows a scenario of transaction which requires player to express the journal entry for those transactions. The transaction can be either revenue or expenses. Players are required to determine the transactions whether it is classified as debit or credit and write on the 3×2 Royale table within the time given based on the sand time or hourglass. Upon completion, players shall submit the answer to the banker and banker will verify the answer referring to the Royale flash card with answer. If players receive a revenue transaction, he/she will be rewarded (with) cash notes equal to the amount stated on the card if it is answered correctly.

However if the answer is incorrect, players will be penalized and in turn will give the banker/controller the equal amount of money as stated on the card. On the other hand, if the players receive the expenses card and they give the right answer for the journal entry, they will be excluded from the penalty. Conversely, if the players give the incorrect answer for the expenses transaction, he/she will have to pay the penalty to the banker based on the amount stated on the flash card. The winner for this game can be determined either through the amount of money gained or the remaining flash card. The player with highest amount of money or else with the lowest flash card in hand is declared as the winner.

SURVEY METHODOLOGY

In order to obtain the response and reaction about this game, a survey was performed. The survey was conducted in the accounting class of non-accounting major student. 250 students participated in this study and they were given one hour to play the game. The students were asked to play the games guided by the lecturer to expose and make them familiar with the game experience. The lecturer clarified to the student about the game’s rules and objectives so that they understand the purpose of the games and how it relates to the subject. To test the usability of the game among students, therefore the feedback from the respondent is crucial in order to evaluate and assess its functionality. Hence, the questionnaire was designed based on the measurement used in previous study by Nitkin (2011) with some modification to fit our research

context. The questionnaire consists of two parts. The first part contains three subsections that intended to identify the effectiveness of this game while the second part focused on the respondents' profile.

The questions under subsection 1 focuses on the added value elements offered by the game to aid class activity and 6 statements were provided under this subsection. Next, 4 statements in subsection 2 asks the respondents about the game's effectiveness as a method to review and reinforce the steps in accounting equation. Under subsection 3, respondents had to give their evaluation on the benefits of peer teaching and learning. The questionnaire used was structured as 1 to 5 points Likert scale representing strongly disagree until strongly agree respectively. The respondents were also asked to provide some opinion on what is the best thing about this game. This unstructured question allows the respondents to write their feelings and perceptions about the game. At the end of the questionnaire, the respondents were allowed to give their suggestions on how the game could be improvised in the future. Last but not least, under the demographic details section, respondents were required to provide information such as age, gender and the experience in learning the accounting subject.

FINDINGS

Table 1 summarized the respondent's profile based on demographic information. A total of 250 students who were learning basic accounting participated in this study. Participants in this study were female 98 (39.2%) and 152 (60.8%) were male aged between 18 to 20 years old (39.6%), 20 to 21 years old (24.0%) and 22 to 23

TABLE 1. Respondents' demographic information

| Demographic Category | | N | Percent % |
|--------------------------------------|-------------------|-----|-----------|
| Gender | Male | 152 | 60.8 |
| | Female | 98 | 39.2 |
| Age | 18 – 19 years old | 99 | 39.6 |
| | 20 – 21 years old | 60 | 24.0 |
| | 22 – 23 years old | 91 | 36.4 |
| Learned accounting subject at school | Yes | 150 | 60.0 |
| | No | 100 | 40.0 |
| | Total | 250 | 100 |

years old (36.4%). A number of 150 (60.0%) participants stated that they have learned accounting subject during at school while 100 (40.0%) have not learned accounting previously, hence making them first time learners at university level.

From Table 2, no respondents stated whether disagreed or strongly disagreed to all the statements. Interestingly, in average, more than half of the participants marked strongly agreed for all the statements. Most of the students perceived the game to be valuable compared to other approaches in learning accounting such as cases or videos. This is shown by highest Mean value (4.54) recorded representing statement number 4. Statement 5 and 6 show similar Mean value of 4.52. For both statements, 61.2% respondents strongly agreed that the game have changed the way they think about accounting course and they could easily identify the elements in income and expenses. With Mean value of 4.51, 58.8% students strongly agreed and 33.6% agreed that they would recommend using the game again in future classes. Statements 1 and 2 both show a slight difference by 4.46 and 4.47 Mean value, respectively. For statement 1, it

TABLE 2. Student's perceive about the game

| No. | Do students perceive the game to be a valuable addition to class? | | Percentage (%) | Mean |
|-----|---|----------------|----------------|------|
| 1 | The game was well structured and well organized | Neutral | 6.8 | 4.46 |
| | | Agree | 40.0 | |
| | | Strongly Agree | 53.2 | |
| 2 | The game was a good way to review before the midterm | Neutral | 9.2 | 4.47 |
| | | Agree | 34.8 | |
| | | Strongly Agree | 56.0 | |
| 3 | I would recommend using the game again in future classes | Neutral | 7.6 | 4.51 |
| | | Agree | 33.6 | |
| | | Strongly Agree | 58.8 | |
| 4 | Compared to other approaches that teach accounting (i.e. cases, videos), this game was very effective | Neutral | 9.2 | 4.54 |
| | | Agree | 27.6 | |
| | | Strongly Agree | 63.2 | |
| 5 | As a result of game, I have changed the way I normally think about accounting courses | Neutral | 9.2 | 4.52 |
| | | Agree | 29.6 | |
| | | Strongly Agree | 61.2 | |
| 6 | After playing this games, I could easily identify the elements in the two of the five accounting principle; income and expenses | Neutral | 9.2 | 4.52 |
| | | Agree | 29.6 | |
| | | Strongly Agree | 61.2 | |

asked students about the structure and organization of the game. While statement 2 asked them whether this game was a good way to review topics that they have learnt.

The students were also asked whether the exercise in the game provides an effective method to review and reinforce the steps of accounting equation. The result is represented in Table 3 where it shows the highest Mean value of 4.52 represented by three statements that are statement 1, 3 and 4. It shows that 59.36% students strongly agreed, 32.8% agreed and 7.6% marked neutral for the statement that the game helped them better at understanding the set-up of accounting system in order to understand the accounting equation. On the other hand, 58.8% respondents strongly agreed, 34.8% respondents agreed while 6.4% respondents stated neutral on the statement that the game helped them better understand how to evaluate and classify the assets, liabilities, owner's equity, revenue and expenses. In addition, this game was also able to help them better understand the accounting terminology and jargon. Meanwhile statement 2 reflected that this game helped students to better understand how to evaluate and record transactions. This is shown by a Mean value of 4.49 and the rest of the results are shown in Table 3.

Next subsection of the study was conducted to identify whether students can perceive the benefit of the game specifically in peer teaching and learning. The

result in Table 4 shows there are similar Mean value for both statement 1 and statement 2 which recorded the Mean of 4.52. However, this result was represented by different pattern of students' response. It shows that 58.4% students strongly agreed and 35.6% agreed to the statement working with classmate with this game helped them better understand and apply the accounting concepts. This game also opens the students' mind to view accounting subject in new perspective. As represented by statement 2, 59.2% students strongly agreed and 34.0% agreed when they learned through the game made them rethink their assumption about an accounting subject whereby it is actually not too difficult. The result also show only 6.0% and 6.8% respondents stated neutral for both statements.

IMPACTS OF ACCROBA GAME INTO LEARNER'S ACCEPTANCE IN ACCOUNTING COURSE

By using this game, it is anticipated to alleviate and rejuvenate the learning styles particularly in accounting subject. Since students have difficulties to understand this subject, hence it becomes the catalyst for the educator to take steps in finding alternatives to mitigate this problem. Therefore, a rather radical approach is taken that later on brought the idea to the birth of this game. It is expected

TABLE 3. The effectiveness of the game to the student's exercises

| No. | Does the exercise provide an effective method to review and reinforce the steps of the accounting equation | | Percentage (%) | Mean |
|-----|---|----------------|----------------|------|
| 1 | The game helped me better understand setting up an accounting system to understand the accounting equation | Neutral | 7.6 | 4.52 |
| | | Agree | 32.8 | |
| | | Strongly Agree | 59.6 | |
| 2 | The game helped me better understand how to evaluate and record transactions | Neutral | 8.4 | 4.49 |
| | | Agree | 34.4 | |
| | | Strongly Agree | 57.2 | |
| 3 | The game helped me better understand how to evaluate and classify the assets, liabilities, owner's equity, revenue and expenses | Neutral | 6.4 | 4.52 |
| | | Agree | 34.8 | |
| | | Strongly Agree | 58.8 | |
| 4 | The game helped me better understand the accounting terminology and jargon in easier way | Neutral | 6.8 | 4.52 |
| | | Agree | 34.0 | |
| | | Strongly Agree | 59.2 | |

TABLE 4. Benefits of the game

| No. | Does the game help highlight the benefits of peer teaching and learning? | | Percentage (%) | Mean |
|-----|--|----------------|----------------|------|
| 1 | Working with my classmates helped me better understand and apply the accounting concepts | Neutral | 6.0 | 4.52 |
| | | Agree | 35.6 | |
| | | Strongly Agree | 58.4 | |
| 2 | What I have learned in the game made me rethink my assumption about an accounting subject is not too difficult | Neutral | 6.8 | 4.52 |
| | | Agree | 34.0 | |
| | | Strongly Agree | 59.2 | |

that students should be able to demonstrate their capability in observing and understanding the accounting subject as well as to develop awareness and consideration of the endeavor in interaction with its environment. This game is able to improve the effectiveness of students to be aware of, seeking out, and making use of resources available in accomplishing their tasks and responsibilities. Besides that, this game can expose students to the concept of teamwork and group cooperation where it highlights the importance of group work which not only can be applied based on current needs but also future environment.

The positive respond from the participants indicated that this game truly can improve the learning styles in order to understand the accounting subject better. As the activities built into this game offers significant repeat play value, it gives the opportunity for students to continue to play and play until they feel assured to answer the questions correctly. As mentioned by Whitton (2012), the use of games can be an excellent way to support constructivist pedagogies since it involves active learning and participative teaching approaches. Games also provide contextual experience that allow learning through practice, failure, reflection and repetition (Whitton 2012). Furthermore, this game also promote collaboration as players need to work together, therefore, indirectly they can share their understanding about a specific subject with others.

Furthermore, this game also has joined the International Invention, Innovation and Design (IID) competition, a platform that highlights research products and promotes the culture of research and innovation among participants from local and foreign institutions of higher education. In this competition, AccRoBa Game Approach received positive remarks and majority of the judges and the audiences agreed that this game is able to bring positive outcome in learning styles.

CONCLUSION AND FUTURE RESEARCH

This game has the potential to be an interesting teaching and learning apparatus to teach non-accounting students in order to improve their understanding of the accounting subject. From the survey, majority of the respondents would like to recommend this game to be used in accounting class since they noticed that it could function better and can be an alternative in teaching compared to other teaching materials such as the case study and video. This game is appropriate to be played before midterm exam as all the accounting subtopics have already been taught and discussed in the classroom. The main element of fun and joy applies in this game as the player will be given a particular amount of money and resemble the actual transactions. But at the same time, the player needs to make sure that they provide a correct answer. Despite the fun that it gives to students, this game also teaches the student to be more careful in making decision. Some

respondents also mentioned that the game helps them to think faster. This condition might be related to the situation where most of the students have insufficient time to answer the question in the examination therefore resulting them being unable to answer questions in detail. Thus, being able to think fast is critical particularly for student who taking accounting subjects. It is evident that this game is more than just a game as it can train students in term of thinking skills, their readiness, and more importantly the technique to answer questions.

This game is believed to be able to help students recall the topic learned in the classroom. Majority of the participants agreed that this game allow them to have a better understanding on how to evaluate and classify the common accounting principles such assets, liabilities, owner's equity, revenue and expenses. The game also helps to alleviate the feeling of stress among student as accounting subject could be their most unfavorable subject. During the observation, the respondents showed that they like the game as it creates competitive environment among their peer, thus motivates them to study accounting. As accounting subject need both skills of calculation and theory, thus this game is also good to ignite the student's thinking skill. The thinking skill can be developed through peer learning which is offered in this game.

There are few limitations during conducting the survey. First, the time given for playing the game is not sufficient where many students unable to finish the game. Thus, it is not suitable to be applied during class session with a short period. Secondly, the topic covers in this game only include the topic of accounting concept and not the whole subject. For future research, this study could possibly be extended and include other important topics in accounting subject to be converted into game. This study also suggest that this game should be played during leisure time. However it still applicable to be used during class session but requires inclusive decision from the learners and educators. Furthermore, not only accounting, but the 'learning through play' concept could also be applicable to other subjects as reflected from the respondents positive responses in this study. To make the game more interesting, some respondents suggest any special gift should be provided to encourage the player to play the game seriously. They also recommended that the duration of the game be extended so that the players could answer more questions and allow them to learn more.

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APPENDIX A: LAYOUT OF THE GAME



FIGURE 1. The items in AccRoBa Game Approach

The items in AccRoBa Game Approach depicted by number shown in Figure 1 are as follows:

1. Royale Wallet
2. Royale circle model
3. Handy ledger
4. Royale access gate
5. Valley of death & Forest of sorrow
6. Spinner of death containing balls, hourglass, dices, pen and eraser
7. Instruction manual
8. Royale flash cards
9. 3 x 2 Royale table
10. Ledger card.

Special name was certain to each item in order to make the pedagogy method using this game become more exciting and appropriate with the level of accounting learners in the secondary school and university.

The game playing method, contents, rules/instruction manual and items has been filed for the protection of Intellectual property right (IPR) and the Copyright No. has been granted by MyIPO on 24 April 2015 (CRAR00000727).

The close up of some items of the game are as follows:

| Revenue | | Expenses | |
|------------------------|--|--|------------------------|
| Reply | <p style="text-align: center;">Congratulations, It's A Revenue</p> <p style="text-align: center;"><small>(What You Received/Entered/Printed/Sold either through cash in hand or cash at bank)</small></p> | <p style="text-align: center;">Oh No, Misfortune...It's An Expenses</p> <p style="text-align: center;"><small>(What You Paid/Spent/Buy/Borrow/Purchase either through cash in hand or cash at bank)</small></p> | Commission |
| Commission | | | Andi fee |
| Dividend | | | Purchase |
| Bank | | | Debit card |
| Sale | | | Legal fee |
| Printing fee | | | Medical and treatment |
| Reply | | | Advertisement |
| Interest | | | Increase |
| Income from services | | | Real tax |
| Profit from investment | | | Repair and maintenance |
| Dividend received | | | Rent |
| Interest | | | Traveling |
| Bank | | | Bank |
| Bank | | | Transportation |
| Bank | | | Debit |
| Bank | Business related | | |
| Bank | Reputation | | |
| Bank | Water expense | | |
| Bank | Interest | | |
| Bank | General | | |
| Bank | Printing charge | | |
| Bank | Wage | | |
| Bank | Electricity | | |
| Bank | Water | | |
| Bank | Telephone | | |
| Bank | Penal | | |

FIGURE 2. Royale ball access gate



FIGURE 3. Royale circle model

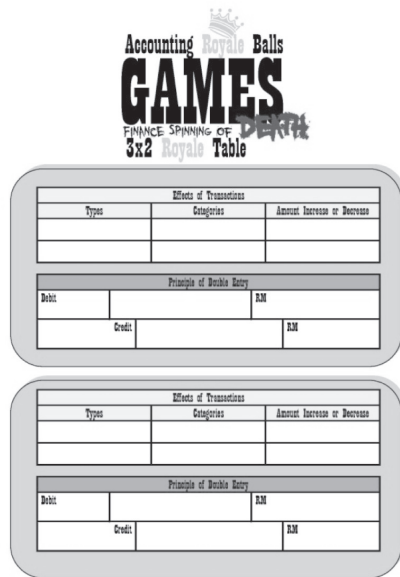


FIGURE 4. 3 × 2 royale table



FIGURE 5. Example of royale flash card

APPENDIX B: PLAYING THE ACCROBA GAME APPROACH



Each player will roll the dices to determine their play turn. They are supplied with the items such as Royale pen and eraser, 3 x 2 Royale table, Royale access gate, ledger card and Royale wallet that contain Royale cash. Player that plays as banker or controller are supplied with the items such as Royale wallet that contain Royale cash, sand time, instruction manual, Handy ledger, Valley of death and Forest of sorrow.



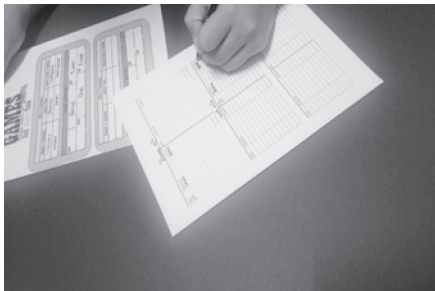
To start playing, players will role the Royale spinning of death until the ball drawn out automatically from the revolving container. Each ball have a printed number on it. In this example, the ball was marked by number 21. The banker/controller will give the player a Royale flash card number 21 as indicated by the ball.



The flash card will indicate whether a player receives an Expenses card or Revenue card which has a scenario of transaction. Player can refer the Royale access gate on Expenses column. The Royale access gate presenting list of items that classified under revenue or expenses that are used in this game.



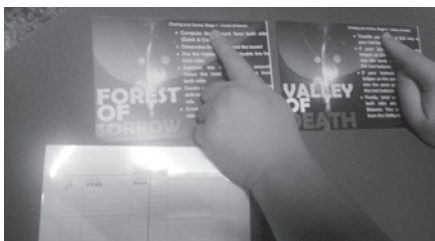
The player needs to fill up the 3 x 2 Royale table according to the information on the flash card. Banker/ controller will ensure that the player able to finish their answer according to the time indicated by the hourglass. Player also can refer the Royale circle model to help them classify the debit or credit side of the transaction. It also as part of to recognize the impacts for the items whether the amount increase or decrease.



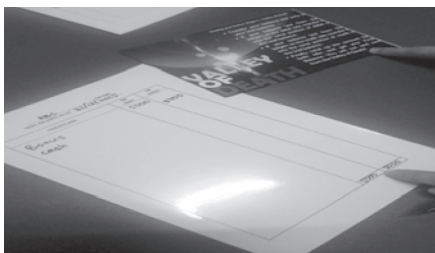
Before proceed the recording of transaction in the journal. Banker will draw out a Handy ledger and player has to determine which item that is credit or debit. Player will then transfer the information on the 3 x 2 Royale table into the ledger account.



The banker/controller will validate the transaction based on the answer sheet supplied in this game. The correct answer will be rewarded cash equal the transaction amount stated on the card. Contrary, if the players' answer is wrong or they does not make it in time, they will be given a penalty where they are required to pay the banker/controller the amount equal to the transaction stated on the card.



To end this game, it can be determined whether all the transaction flash cards were used; the player is declared bankruptcy or retreat. Banker than will use his authority with the two cards that are Forest of sorrow and Valley of death. These cards provide step by step process from calculate all the revenue and expenses until the preparation of trial balance statement.



Players will prepare the trial balance account to finish the game. The winner or loser of the game is indicated by the amount of remaining cash available in their Royale Wallet.

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