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## Using Games as Interactive Learning Tools in Accounting Courses

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**Abstract:** Accounting courses have always been perceived as dry and difficult to understand. In order to attract students to love accounting, educators try to find interactive tools in teaching the students. Many researchers have carried out studies on interactive learning tools that can be used in teaching accounting subject. This paper reviews the literature of using games as interactive learning tools in accounting courses. The aim of this paper is to explore the types of games used in learning accounting courses. It also highlights the strength and weaknesses of the games used. In order to achieve the research objectives several games used by previous researchers are discussed in this study namely; Financial Statement Bingo, Double Entry Monopoly Games and Crossword Puzzle. Most of the literature highlighted that these interactive learning tools will make learning more fun and easier to understand, promote teamwork and stimulate the ability to think among the students. However, several weaknesses were discovered such as time constraint and it will burden the educators in terms of preparing the games and getting familiar with the rules of the games. Nevertheless, considering all the benefits of the games used, educators should try to apply these games in teaching accounting courses.

**Keywords:** Accounting, Games, Interactive Learning, Tools

### 1. Introduction

Accounting courses have always been perceived as uninspiring, uninteresting and excitement lacking to students (Rhodes & Smith, 2004, McGowen, 2012; Warren and Young, 2012; Husin et al., 2014). The common nature of learning accounting is students learn by doing. A random unstructured interview with students taking company account courses in Universiti Teknologi MARA (UiTM) Cawangan Pahang focusing on preparation of published financial statements indicated that many students found the subject to be very challenging. This is possibly due to the specific format to be followed, many financial items to be dealt with, and the various MFRS that have to be applied in the preparation of financial statements. Combined with the use of conventional teaching approaches, students tend to get lost and lose interest in the classroom. Husin et al. (2014) highlighted that lack of interest in accounting subject, poor study skill and inactive class participation were factors that contributed to the poor performance in FAR400 courses of the Bachelor of Accountancy (BAcc) in UiTM Cawangan Pahang. Due to this issue, it is necessary to find the alternative way in teaching financial accounting subject.

Many researches have been conducted on the use of interactive learning tools in teaching and learning process. One of the methods suggested by previous literature is gamed-based learning. As quoted by Moncada and Moncada (2014), Apostol et al. (2013) defines gamed-based learning as applying the mechanics of games in order to make learning more appealing. Several advantages of gamed-based learning have been proven by previous studies such as it will increase student involvement, provide responsive environment, an interesting learning process, increase motivation and encourage student interest (Ritzko & Robinson, 2006; Leathem & Tatum, 2012; Michel et al., 2013). Ritzko and Robinson (2006) state that students perceived a positive learning experience through the use of jeopardy and crossword puzzle in teaching and learning process. Well-designed games create an engaging atmosphere, provide

non-threatening, playful, and competitive environment in which to focus on content, reinforce and apply learning (Treher, 2011).

Based on the review of the games' development as a teaching tool in accounting education, Moncada and Moncada (2014) summarize that monopoly, jeopardy, bingo, puzzles are the most popular games adopted by educators in accounting education. Thus, the objectives of this paper are to explore the types of games used as interactive learning tools in teaching accounting subject and to identify the strength and weaknesses of the games used.

## **2. Games in Learning Accounting Courses**

Based on the review of previous literature, there are several types of games used as interactive teaching and learning tool in accounting subject. Below are the games that have been applied:

### **2.1 Financial Statement Bingo**

'Financial Statement Bingo' is designed to help students learn the appropriate classifications of account in the financial statements, namely the classified balance sheet and the income statement. It also addresses the definitions of the basic accounting principles and assumptions which govern the preparation of financial statements. There are three materials needed to play the game which include: 1) bingo cards with spaces randomly arranged with account classifications, principles and assumptions; 2) card markers to mark the spaces on the card; and 3) caller's cards with account titles and definitions of assumptions and principles (for example current asset, revenue, relevance, compatibility). The caller should read the account name or principle definition on the caller cards and allow players to find the appropriate account classification or principle/assumption on the bingo card. The players place markers on the box of choice in the attempt 'to bingo' by lining up markers, five in a row, in a vertical or diagonal pattern. To bingo, a player must correctly identify all five marked spaces containing the account classification, assumption or principle on the individual bingo cards as the caller gives the information (Rhodes & Smith, 2004).

### **2.2 What's the Adjusting Entry?**

This game enhances students' basic understanding of adjusting entries by preparing journal entries randomly picked from a game board. Materials needed to play the game are: 1) the board with pockets; 2) Adjusting entry cards; 3) a list of possible transactions to be drawn from the game board and 4) journal page for each player. To play the game, facilitator should insert one game card into each pocket. A beginning player should choose a card from a pocket and read the transaction information aloud to allow other players to find the entry on the accompanying worksheet. The player should (1) identify the basic type of adjusting entry (i.e. deferral or accrual) and (2) write the correct journal entry on the board or overhead projector. Each correct entry is worth one point. If the players give an incorrect entry, other players may have the opportunity to win the point by giving the correct entry. The player with the most points wins (Rhodes & Smith, 2004).

### **2.3 The Budget Simulation Game**

This simulation game is designed for Management Accounting subject focusing on the budget preparation. The game is created within the excel spreadsheet using Visual Basic Application (VBA) for the purpose of explaining one such concept, namely uncertainty and the effect it has on the decision making process. This concept is used because in preparing budget, it always deals with uncertainty. In order to play this simulation game, students will be given a scenario of a company that wants to produce a product. Students will act as a managerial accountant of the company and have to make a decision about the budgeted production unit for

each quarter after considering the entire situation given. The student groups will be instructed to discuss their selected budgeted production units as a group before making a decision for each quarter. The 'game master' will conduct the game for each quarter and collects the decisions from the team and subsequently runs the random demand simulation for the quarter. The quarter's profit as well as their cumulative profit up to that quarter is then presented. From the result, the students will see the consequences of over or under budgeting. This game will help the students to understand the concept of uncertainty in preparing a budget (Mitchel et al., 2013).

#### **2.4 Double Entry Monopoly Game**

The rules of monopoly are applied in this game with some modification. The basic strategy of the monopoly games is unchanged which is to purchase as many properties as possible, so that students can build on them to maximize the amount of rental that can be collected from the opponent in order to bankrupt them. Students are allowed to build on property without having to collect the whole color-group set of properties first in order to ensure the game progresses faster. The rule of the game is players should maintain the record and ensure that the accounting equation remains balance. Every time they perform a transaction, they have to determine the double entry to record the transaction. They are given transaction analysis chart to record all the effect of the transaction to the accounting equation and determine the double entry. At the end of the game, students need to determine the wealth or the lack of it by paying off any debts to the banks and other players. They are also required to total up their cash, buildings and property valued at the historical cost. If the students can manage to keep proper record while trying to make money, they are considered excellent. The purpose of this game is to encourage students to learn the double entry rules and the effect of the transaction on the accounting equation. It helps to create a more conducive learning environment, fun and meaningful (Allen et al., 2011).

#### **2.5 Puzzle Game**

This game was developed to help student understand the key terminologies and concepts in the government at all levels, i.e. federal, state and local. It also applies in nonprofit accounting courses including the special accounting for colleges and universities and health care organization. This puzzle game consists of 17 topical crossword puzzles and three business puzzles based on material presented in the specialized accounting text. Each student is given a puzzle which consists of ten clues on the fundamental points covered in the syllabus. When requested by the instructor, students will mark on the back of the puzzle either heads or tails prior to the official coin toss. Then, the instructor will flip the official coin and call the outcome. Students with a correct choice have five minutes to complete the puzzle; while those students who choose incorrectly have only three minutes for the same task. When the time elapsed, puzzles are exchanged among students, who now serve as ethics monitors. The function of ethics monitors is to grade the puzzles as the answers are reviewed (Elson et al., 2011).

#### **2.6 The Crossword Puzzles Game**

The purpose of this game is to ensure students' preparation for class and level of interest on the theoretical part of the Accounting and Finance courses. Simple crossword puzzles were designed for each chapter in the Accounting and Finance course to test the students' understanding on the theoretical part of the topics. This puzzle will be given to students after each chapter has been covered in class. Prior to that, they will be asked to read the theoretical parts of the subject which could help them participate in this game (Azis & Mat, 2008).

### 3. Strength and Weaknesses using Games as Interactive Learning Tools in Accounting Courses

Most of the literature highlighted that using games as interactive learning tools will give more advantages to the students and lecturers. Students feel that this method makes them learn in a fun way and have more interests to learn the subject (Rhodes and Smith, 2004; Allen et al., 2011; Leathem and Tatum, 2012). Rhodes and Smith (2004) studied the alternative instructional methods used in the classroom and reported how games can be used to reinforce classroom coverage of basic financial accounting information in an instructional environment that is supplementary to the classroom. They stated that learning accounting principles are more attainable and fun using hands-on activities and games. The use of games is one method to increase student activity and involvement in the learning process. This is also supported by Drake and Sung (2011) in their study on the teaching programming subject using board games.

The use of games as an alternative teaching method also helps to increase the understanding level of the subject matter. Students commented that it was easier for them to understand the subject as compared to when the traditional method was used. This alternative method also provided a conducive learning environment and helped the students to learn in an effective way. This has been proven by the research done by Allen et al. (2011), Mitchel et al. (2013) and Drake and Sung (2011).

Azis and Mat (2008) also pointed out that the use of the crossword puzzle in accounting and finance class helps the students to develop their thinking skills and strategies. Furthermore, this method improves students' memory on new terms found in each topic. Based on their study, they concluded that this method provides positive entertainment in class and opportunities for better and effective learning.

However, the use of games as teaching and learning tools in the classroom also has several disadvantages. One of the disadvantages is time constraint. Certain games such as monopoly will take time as students can become excited in playing the games (Tanner and Lindquist, 1998). Therefore, lecturers or instructors have to limit the time in order to ensure that the syllabuses are covered. This will intrude the benefits of the games and may make the students feel frustrated. Students may also get confused about how to play the games if they do not understand the objective. This may be due to the poorly designed games as stated by Ritzko and Robinson (2006) in their study.

To have effective and efficient games, there must have clear objective and understandable rules of the games. In order to have this, educators must have good preparation and have a high level of familiarity with the games. Not only they have to prepare for the courses that they teach, but they also have to prepare a good game. This may make the educators not interested in using the games in the classroom. This is supported by research done by Sandford (2006).

### 4. Conclusion

While many students view accounting as a boring subject, it does not have to be. Educators need to do more to engage students and prepare them for the rapidly changing business world they will enter soon. By combining traditional teaching method with interactive learning tools, accounting courses especially financial accounting can be engaging and exciting. In order to have efficient and effective course objectives, which involve complex cognitive learning skills; educators need to promote active learning on the part of the students. The use of games will help the educators and students in creating a good and conducive learning environment and make the teaching and learning process becomes interesting and enjoyable. In order to overcome the disadvantages of the games, educators may try to involve students in preparing the games. As suggested by Camp et al. (2012), educators can ask the students to identify the key knowledge concepts from the lecture given and try to develop a creative way to review that information. If the students are involved in the process, it will make the students

become familiar with the games and easier for them to maximize the benefits of the games. By doing this, both parties can achieve the learning objectives and the learning process becomes more interesting.

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