Abstract

This paper describes the implementation of a program to utilise an existing and highly recognised board game as a learning tool for teaching fundamental accounting concepts in first year of an undergraduate degree program. The use of the game is still under development and this paper provides a simple analysis of the initial implementation.

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Introduction

In the quest to educate students in the university environment most traditional teaching methods utilising lecture/tutorial/lab sessions still dominate. The role of the lecturer is to disseminate information or knowledge to a relatively passive student body with this information later reinforced through small tutorial groups and practical classes. Such a model of teaching and learning assumes that there will be a transmission of knowledge from the lecturer to the student.

An alternative to this traditional method is the constructivist or deep learning approach, which sees the student as an active participant in the process. The learner constructs a picture of the world from personal experience (National Board of Education and Training, 1995). Under such an approach the emphasis will be on developing skills in the learner to construct patterns of meaning and significance using intellectual or theoretical frameworks.

As pointed out by Laurillard (1993) the teacher is an important mediator on the process of constructivist learning. The teacher in undergraduate programs, where students predominantly have little life experience, is partly responsible for providing experiences from which students can construct their own meaning.

In recent years with availability of technology and influenced by the desire of key professional bodies and employer organisations for students to have a greater exposure to information technology (Bedford Committee, 1986, American Education Change Commission, Institute of Chartered Accountants in Australia, 1994). A number of Computer Assisted Learning Packages have been developed in the form of electronic versions of the previously available manual practice sets and computer-aided instructional packages. In addition, commercial accounting packages have been adapted and introduced into curriculum. While students gain computing skills, which may enhance employment prospects, they do not appear to enhance understanding of accounting procedures and concepts (O'Connell et al, 2001).

This paper describes the implementation of a program to utilise an existing and highly recognised board game as a learning tool for teaching fundamental accounting concepts in a first year second semester accounting subject. The use of the game is still under development and this paper provides a simple analysis of the initial implementation.

As early as 1843 board games have been used as educational tools. The Mansion of Happiness was one of the first board games published in the United States with the goal of instilling virtues as a means by which players could reach the heaven along the road of life. (Jenson, J. 2001)

There has already been established an association between deep learning and level of interest (Biggs, 1979; Entwistle & Ramsden, 1983; Schiefele 1992 & 1996), the challenge is to find an entertaining means by which personal experience can be replicated. The use of the board game Monopoly aims to stimulate student interest, thus capturing a crucial component of the student's approach to learning and promote the adoption of a deep approach to learning.
Motivation for Study

Prompted by a presentation at the AAANZ Education Special Interest Group Symposium in Adelaide in 1998 it was decided to explore the possibility of introducing Monopoly as a teaching tool into a first year accounting program. Acknowledging that the constructivists approach to learning is one which encourages deep learning rather than the traditional surface learning approach, yet acknowledging the difficulty for undergraduate first year students to place accounting concepts within an environment in which they are familiar Monopoly was considered an option to replicate a trading environment.

Interactive Computer Programs have provided an effective simulation of the real world but run the risk of losing the benefits of effective communication that comes from face-to-face interaction. Development of an effective learning tool to simulate the real world and encouraging communication between team members and others within the tutorial class will assist not only the understanding of accounting concepts but also the development of generic skills of the students.

Objectives

The specific objectives of the experiment were to:

- Apply a constructivist approach to tutorial exercise by connecting the previous experiences and knowledge - wealth maximising aims of monopoly game, to new concepts of accounting theory.
- Provide a framework for and encourage teamwork
- Develop a deeper understanding of the interrelationship between entities trading with each other.
- Promote interaction within the tutorial to develop communication skills.
- Create a unique exercise for each student group to encourage analysis and problem solving skills

Developing the Game

The rules of Monopoly were slightly altered in order to broaden the types of financial transactions encountered by the students. Finance for each group comprised $750 in equity contributions and a loan from the bank for $750. The bank loan was subject to a weekly interest charge. Up to two houses were permitted to be purchased without the requirement to own a group of properties in order to encourage ongoing development and to require end of period adjustments for depreciation.

Students were given the option to participate or not to participate and were allocated to groups of four or five dependent on the class size. Each group was required to record transactions utilising a transaction analysis chart supplied as part of a workbook. In addition to the template for transaction analysis templates were provided for the General Journal, Ledgers and Financial Statements. The workbook was issued in both a hard copy and electronic version.

The assignment had two parts,

1. Each group was required to prepare books of account under a manual system including the production of financial statements utilising the workbook templates.
2. Secondly they were required to use the Quicken program, after instruction, to replicate the exercise of preparing financial statements.

**Student Responses**

In excess of 90% of students opted to participate in the game of which 56% responded to a survey to evaluate the effectiveness of the assignment. The following results pertaining only to the Monopoly game were extracted. Specifically in reviewing the pilot implementation of the game four areas were considered

1. Teamwork
2. Assist the Understanding of Accounting Concepts
3. Format of Task
4. Perceived value of playing to the student.

**Teamwork**
A key objective of the introduction of the game was to encourage teamwork as both a useful learning tool and to assist in the development of generic skills.

![Team Work Chart](chart)

Clearly from the above table it can be seen that students preferred to work in a team despite nearly 50% indicating that not all members of the team contributed to the exercise. Lack on contribution would support a clear preference to choose own members of the team

**Assist the Understanding of Accounting Concepts**
It was important to ensure the exercise provided a link to the accounting concepts being taught and was not viewed simply as an entertaining alternative to the traditional tutorial. The students were asked if the task assisted their understanding of the recording process, journals versus ledgers, transaction analysis and debits and credits. The following table summarises their responses and gives a strong indication that students feel their understanding in these areas was affected by the game.
A comparison of the results for the final exam questions relating to the recording of transactions in journals and ledgers indicated a slight improvement of 5% in the pass rate in respect of questions of this nature from the previous year. Students in the year under study and the previous year were comparable in that both groups were first year students, predominately studying Business programs and with comparable Enter (or equivalent entry) scores.

**Format of Task**

Clear instruction and understanding of the task is crucial for its success. Some problems were encountered including confusion as to what was expected, lack of time in some weeks to play thus generating few transactions for analysis. Also physical problems including crowding, set up problems lost or forgotten tokens, money etc.

Clearly almost all students were familiar with the game and understood the revised rules. While the task was not perceived to be too complex students perhaps expectedly did not consider it too simple. Predominantly students understood what was required with the workbook however there were less positive responses in respect of its usefulness. It was decided in repeating the task to withdraw the use of the workbook
on the basis that it was not crucial to either playing the game or providing additional instruction.

*Perceived value of playing to the student.*

Overwhelming support was given to the value of the assignment. However this response needs to be tempered by the recognition of the game as being only one part of a larger assignment. This question was asked in a general sense but does provide encouragement to continue to develop the game.

<table>
<thead>
<tr>
<th>Students see Value in assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>agree</td>
</tr>
<tr>
<td>partially agree</td>
</tr>
<tr>
<td>neutral</td>
</tr>
<tr>
<td>partially disagree</td>
</tr>
<tr>
<td>disagree</td>
</tr>
</tbody>
</table>

*Implications for teaching*

It became clear that there was insufficient time within the traditional one-hour tutorial time to play the game, cover other prescribed material and address queries in respect of Quicken. While a lab session was conducted separately for Quicken time was still required within the tutorial to answer queries as they arose. Additional time to be factored into the contact time has implications for staff costs. Part of the time problem would be overcome by separating the task between first and second semester.

The transaction analysis exercise was not challenging for students, while it afforded an opportunity to review material covered in the first semester subject it was concluded that the game might be more beneficial if offered in the first semester subject.

For 2002 the Monopoly game and recording of transactions using a manual system will be introduced in semester 1, students will be given the option to use these same transactions or an issued standard set in semester 2 to prepare report utilizing a commercial accounting package.

While students indicated a preference for choosing teams it was decided that this would not be feasible if the game was introduced into the first semester subject. Further students needed the skills to ensure an effective working team. There would need to be more direction from the tutor in respect of techniques to handle problems within teams. It was also felt that reducing the number of members would provide less difficulties in maintaining an effective working group.
Conclusion
It was not the intention to evaluate the effectiveness of the game at this time, rather to trial its implementation to identify procedural difficulties in its application. Indications from the students are that the game is beneficial in encouraging them in teamwork and they perceive it assists in their understanding of conceptual issues. The study suggests that the project is worth pursuing.
Bibliography


