Games and Activities As A Delivery Tool In Information Systems Classes

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ABSTRACT

The use of games, role plays and activities in tertiary level information systems classes has proven to be of major benefit to those students who participate in these activities both academically and socially.

Games and activities are designed as a non-threatening, informal, kinesthetic form of delivering material while encouraging maximum learning.

Examples of games used include Monopoly where community chest and chance cards contained details of information systems workforce roles from which students were expected to take notes.

Activities used include game show style revision sessions where questions are delivered in a manner similar to that of a game show. Questions are broken into categories and non-information systems related questions such as 'name that song' and current events are used as a state change and to encourage all team members to participate in the activity.

Making instant pudding in programming class proved to be a memorable and effective way to demonstrate the differences between properties, objects and relationships.

The final paper will examine and discuss advantages of using these types of activities in classes, as well as successes and failures that were encountered during the delivery of such material.

1. INTRODUCTION

This paper aims to discuss the advantages and effectiveness of incorporating games and activities into degree level papers. Student perception of these activities will be used to identify successes and failures.

Games have been used actively by the author for the past five years in delivering content of a technical and theoretical nature. The reasoning behind this usage is that with modern views there is a place to involve learners "in activity within a group, that relate to real life" and "simulations and games go a long way toward providing these" (Ments, 1999. p. 2). Knowles (1984) suggests that adults are motivated to learn through self-directed, life centered activities. By incorporating play into adult learning, student's learning potential may be maximized.

Howard Gardner (1993), hypothesizes that there are seven intelligences:

- Linguistic
- Musical
- Logical-mathematical
- Spatial
- Body-kinesthetic
- Intrapersonal
- Interpersonal.

Of which Elaine Winters (2001) has re-worded to "impart the sense of play" that she believes is a "critical aspect of how we learn". These are:

- Plays with words
- Plays with music
- Plays with questions
- Plays with pictures
- Plays with moving
- Plays with socializing
- Plays alone.

By catering for as many of these intelligences in a lesson as possible, student interest and ultimately, student retention, is increased. Games and activities are an excellent method of combining these intelligences.

Incorporating activities into a lesson also provides excellent state changes. Activities may also encourage team work and class participation.

2. EXAMPLES

As previously mentioned, the author has actively used games and activities for the last five years while delivering Information Systems theory at tertiary institutes on both entry level and degree level courses.

2.1 BOARD GAMES

Specifically designed board games such as monopoly and snakes and ladders were used to reinforce learning related to the roles of people in the Information Systems Industry. Students were placed in small groups and had 20 minutes to play the board games and participate in other activities. While playing these games, they were required to write down the roles and responsibilities of IT staff as they came across them in the game. After 20 minutes, each group moved to another station or activity and so on.

2.2 GAME SHOW ROLE PLAYS

Before explaining the factors that affect the value of information, students were asked to play 'The Price is Right'. The lecturer played the role of a game show host who provided students with basic information about prizes. Using the information and resources provided, students had to place the prizes into order based on value. Full information was then provided about the prizes to highlight how factors such as timeliness, correctness and reliability affect decision making.

2.3 TENNIS

To demonstrate how access control lists operate on routers, students were allocated a network and given a ping pong ball representing a data packet. As a group, students were required to write an access list to deny or permit specific network traffic. The access list was then demonstrated by students throwing the balls to the lecturer who acted as the router. Permitted traffic was sent on while denied traffic was hit away using a tennis racquet that represented the router interface.

2.4 REVIEW QUIZ

At the end of a topic or unit, students are again placed in groups. They are then asked a number of questions related to a specific topic area which as a group, they must try to answer. A number of non-IT questions are asked between each topic. These questions may range from sports or entertainment to naming the tune. At the conclusion, students either swap their answers with another group for marking or a guest "scrutineer" marks the work based on the answers discussed.

2.5 ORGANISED VANDALISM

To demonstrate the different keyboard architectures in use, students, again in groups, were required to remove the keys from a keyboard. Keys were then scrambled up. Students were required to compete against other teams to successfully reassemble the keyboard by putting keys back in the correct positions, without the use of notes or already assembled keyboards.

3. FEEDBACK

A focus group was organized by the author to establish the effectiveness of using games and activities such as those listed above in Information Systems lectures. Participants were a selection of students who have participated in the games throughout their tertiary experience at UCOL.

The facilitator asked group participants to state why they thought the lecturer used games as a learning tool. Responses included statements such as "to add interest", "add persuasion", "incorporate kinesthetic and tactile learning", "to remove students from their comfort zone" and to provide a "state change". This feedback indicates that students considered and understood the reasoning behind incorporating games into classes.

Students were asked to recall the games that they have played and relate it back to the topic that was covered at the time. The students were able to successfully recall the games played and relate them back to the content covered. This feedback indicates a retention of the material and also suggests that the activities themselves act as a memory trigger. Where students required a little prompting as to the activities performed, they were immediately able to state what content was covered.

When asked how effective the games and activities were comments included that they:

"Add interest to what would normally be a very dry topic" and that they "internalised the learning" by making it more personal and ensuring that students "move, think and talk". This sentiment is shared by Zepke, *et al.* (1996) expressed in their statement "students feelings are as important in determining how effectively they will learn as their intelligence, how they study, or their prior knowledge" (p. 43).

4. SUCCESSFUL IMPLEMENTATION

Perhaps the most important thing to consider when using games and activities into Information Systems classes is framing. Ensuring that students understand the logic behind the activity and are able to recognize the usefulness and relevance of a task will enhance the effectiveness of the activity. It will also assist in ensuring that students actively participate. Failure in sufficiently framing an activity can and has resulted in the failure of that game. Students who can not see the desired outcome of an activity will not participate fully.

Relevance is another issue to consider. Many of the activities that the author has initiated, do not relate to Information Systems in any way such as making instant pudding to explain the difference between an object and a property, therefore it is important that at the end of an activity, the findings and outcomes are related back to the subject at hand.

When discussed with the focus group, the members made comment about participation. Often there were teams where one or more students preferred not to participate. The group stated that these reasons included people being taken out of their comfort zones or simply not wanting to participate. This was identified as a reason why some activities failed - 'team influences affected the activity'.

Ensuring participation is difficult. It has been noted and backed up by the focus group that offering prizes and encouraging competition enhances team participation. When asked if competition was an acceptable motivating factor, members unanimously stated that it was and that competition occurs in the real world and therefore should be used in classes. However it is important to ensure that there are no losers. Offering bonus prizes for the most imaginative answer or the most enthusiastic effort helps to do this.

Prizes are a useful teaching tool. They add excitement to a lesson for very little cost or effort. In the past, prizes have included chocolate bars, stationary and even toys from the children's meals of certain food chains. When asked how appropriate and effective the prizes are, focus group members said that they were fun and 'even a jelly bean each would be OK'.

Another method to assist in ensuring participation is to allow the students to select music to be played while the activity or game occurs. This provides a feeling of empowerment and comfort. In a recent lesson, students selected a compilation of 80's tracks. When asked why they choose this particular CD, feedback given included that it was familiar and you didn't have to listen too hard to try and pick up what the songs were.

5. FAILURES

As mentioned above, failure has stemmed from lack of appropriate framing. One example of failure was during a role play where students had to go through the decision making process to identify the best way to release hostages. This activity was performed before the decision making theory was covered in the hope that students would identify the steps taken to make a decision. The activity was not successful as students could not see exactly why they were required to complete the activity and many did not participate or behave appropriately.

6. CONCLUSION

There is an expectation from students that lectures and discussions should be used extensively in tertiary education, however there is definitely room for change. The author believes that the use of games and activities in the delivery of tertiary level Information Systems classes is highly. Students Appear to gain enjoyment and interest from the activities. They also allow the lecturer to develop a good rapport with the students. When planning to use games or activities to deliver in a lesson it is important to ensure that they are the icing on the cake -not a tool on their own.

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