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CYBER-'SURFIVER': THE DYNAMICS OF A GAME PLAYED IN A WEB-BASED ADULT LEARNING ENVIRONMENT

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Abstract

It regularly happens that learners find themselves in a highly competitive environment when they are playing games as part of a learning program. This research project examined the dynamics in a web-based module that was presented to adults in the form of a game. The module was based on the television reality show, Survivor, in which the competition element between the various tribes, as well as the individuals within a tribe, was strong. However, in Cyber-Surfiver, as this module was called, the collaboration efforts and peer support between the learners were exceptional. Furthermore, the depth of the learning experience exceeded most learners' expectations. This paper aims to explore some of the complexities involved in teaching adult learners by means of a game in an online environment.

Keywords

Game, play, web-based learning, adult learners, Survivor

Introduction

Not long after the birth of computer games, the first hopes for the potential of learning through games were expressed. It was hope that the enthusiasm exhibited when playing games could be used for good, sound learning. Since then, several commercial games showing various degrees of success have been labelled 'edutainment' as a combination of the words 'education' and 'entertainment'.

Despite the large industry producing edutainment for children, commercial games seem to ignore the potential of games for learning. Games do not typically deliver knowledge in a form that is easily measured or evaluated by fixed standards. Some of the attributes paid to games are the development of skills such as level-headedness, analysis, the ability to understand, and interact with rapidly changing environments. Drawing upon a mixture of creativity, analysis and knowledge of other games, the player interacts with, and explores a complex system.

The main potential of games lies in the ability of games to increase motivation through the interactive nature of games, putting the player in control of the learning. However, it seems that most edutainment games have problems living up to these reasons for using games in the first place.

Games are often a social activity, even when played in front of a single computer. Many people prefer to explore games together with others, and often this particular social connection creates the dynamics that support the learning process (Game Research Newsletter, 2002). Working together, learners get to supplement the skills of others, correct each other's mistakes, and learn from one another.

This particular study did not set out to create or investigate a digital game where the content that needed to be mastered, and the outcomes that had to be reached, were somehow buried within the game, waiting to be exposed and absorbed by the learners as they had 'fun'. The aim was particularly to use the metaphor of the Survivor game to create a dynamic learning environment that would support the learning activities that had to take place.

Cyber-Survivor: The context

The context, within which this paper is based, is a two year tutored Masters degree in Computer-Assisted Education at the University of Pretoria, South Africa. The students are all working adults with an Education background ranging in age from 23 - 55. They are all completing the course on a part-time basis whilst working full-time. The module on which this study is based, is entitled *e-Learning*, and took place over a period of 7 weeks from 18 July 2002 till 29 August 2002.

The module was presented entirely online, with only one introductory contact session at the beginning of the course and a closure session right at the end. Pedagogically the module was learner-centered and heavily grounded in a constructivist philosophy, although a number of instructivistic elements were also included. The presentation of the module simulated the spirit of an award-winning reality series shown on national television, namely, *Survivor*. Apart from the location, which in the reality show is usually a deserted, but exotic, piece of land and in this case is cyberspace, the same rules applied and similar events took place throughout the module. The online module was titled 'Cyber-Survivor'.

For this module, learners were divided into 4 tribes, each consisting of 6 learners with widely differing levels of computer and web literacy. On a weekly basis, tribal members had to complete a number of collaborative and individual assignments. Immunity and reward challenges were also posted on a regular basis.

The objective of the Survivor game on television is that tribal members get voted off until only one final survivor remains. Thus, at the end of each Cyber-Survivor week's activities, the tribes had to vote one member off the team based on a number of preset criteria. This member then joined the other evicted learners in a separate tribe. This particular tribe still had to complete all the assignments as it was given to the others who were not yet voted of, however, its members were no longer in the running for the final grand prize. The Cyber-Survivor prize constituted a weekend away for a family of 6 at a local holiday resort.

All the interaction throughout the module had to be done online via the Cyber-Island's communication channels, and telephone calls and other forms of face-to-face contact between learners were strongly discouraged. The instructions for the weekly assignments had to be accessed via the Internet and all the interactions between tribal members themselves, or with the facilitator of the course took place using a number of pre-selected web-based communication tools. These included both synchronous and asynchronous services and products of which some was available free of charge and others were commercial.

Data mining

According to Patton (1987), *the evaluation of any research data should take into consideration a multiplicity of evidence gathered through numerous data collection methods and incorporate both quantitative and qualitative methods*. One of the distinctive features of this study is the number of data sources available for both quantitative and qualitative analysis. Multiple sources of information in the data collection phase were used to provide the detailed in-depth picture of the dynamics present for the duration of the online module.

The data sources (such as e-mail, bulletin board and voice messages) were tapped by a mixture of methods ranging from participant observation and informal conversational interviewing to a systematic consideration of written and auditory records. For the purpose of this paper, however, only one source will be explored closely, namely the results of an online survey.

During the 5th week of the online module, learners were exposed to an assessment in the form of an open-book online test which consisted mainly of essay type questions. The primary aim of this test was to give the learners hands-on experience of writing a test online. The marks they obtained and the insights the facilitator gained from their responses, were secondary purposes.

As a pre-requisite to having their tests marked, the learners were required to complete an online survey questioning them on a variety of their experiences throughout the game. This requirement guaranteed a maximum participation rate among the fifteen learners who were participating.

It should once again be noted that the results from this survey, is only one of the sources of data that will be mined in order to see what effect the game had on adult learning in a web-based environment. The initial findings extrapolated from this survey are reported below.

Cooperating as a strategy

At the university level, teaching of facts and theories should be considered as secondary to the development of learners' critical thinking and use of higher level reasoning strategies. However, the application, analysis, synthesis, and evaluation of knowledge are often neglected. In comparison to competitive or individualistic learning strategies, *cooperative learning* promotes a greater use of higher level reasoning strategies and critical thinking (Gabbert, Johnson & Johnson, 1986).

Rather than isolating learners into their own online world, the ideal e-learning environment gives them a chance to connect with other individuals, such as lecturers, facilitators, subject experts, practitioners, and other peer learners in quest of the same knowledge. This is the one thing that CyberSurviver certainly did provide; an e-learning environment rich with tools and products that facilitates communication and collaboration.

Collaboration is a philosophy of learning where there is a sharing of authority and acceptance of responsibility among group members for the group's actions. The underlying premise of collaborative learning is based upon consensus building through cooperation by group members in contrast to competition in which individuals rival with one another. In our Cyber-Surviver module it was clear to see that the tribes where the members refrained from in-house competition, but instead opted for working together, were more effective in reaching their learning outcomes. Working together in these small groups maximised their learning efforts.

Learners in the Cyber-Surviver module were continuously encouraged to collaborate on ideas, share experiences, exchange viewpoints, and more importantly, build personal connections. This happened to a large extent and these connections will probably remain beneficial even after the structured learning activities are completed.

Individual Assignments

The aim of the Master's Degree in Computer Integrated Education is to combine the computer literacy abilities of the learners with a solid foundation in educational principles. This is the reason why the individual assignments were initially aimed at strengthening the level of the learner's technical capabilities. In this paper, 'technical capabilities' refer to the web-based skills that teachers and trainers working in an online environment would find helpful. Later on in the module there was a gentle shift toward assignments of a more academic nature.

When asked which individual assignments they found most useful, the majority of the learners indicated that the assignments where they firstly had to build their own web sites, and secondly, had to add special features such as polls, puzzles, and java scripting, were most useful.

Only one learner indicated that he/she found it useful to write a publishable article and two learners enjoyed reading the materials that were provided by the facilitator in order to prepare for the formal online test.

Tribal Assignments

Five of the fifteen respondents indicated that they found the tribal assignment in which they had to create their own virtual classroom and virtual learning event the most useful. Creating a concept map of e-learning was the second most popular tribal assignment (four out of fifteen). The other assignments (creating a website that presents free, shareware and/or demo applications, products, tools and services; investigating the educational value of tools such as Yahoo Messenger and InterWise; and creating learning activities and games using free services online) were all mentioned by various individuals as their favourites.

Gaming elements

Most learners actively took part in the immunity and reward challenges as nine of the fifteen learners indicated that they participated. Six of these learners pointed out that they experienced the games as good fun and enjoyed taking part in them. As one learner put it: *I thought they were fun, appropriate and would have liked to see more on them* [sic]. One of the four learners indicating that he/she did not take part, listed time constraints as the reason, whilst another suggested that he/she was not competitive by nature and thus not motivated by this type of activity.

Voting

The initial findings show that all learners did not look upon the voting activity favourably. Whilst some did not like the idea right from the start, others indicated that they wanted to be voted off a particular tribe due to conflict experienced in relationships with other tribal members as the game progressed. Other learners were often caught between the option to vote a favourite tribal partner off, or refrain from voting and risk being voted off themselves.

Interestingly enough, the voting patterns differed from those in the reality game shown on television. Whereas the strongest opposition is usually the first to be voted off on the Survivor show, the tribal members in CyberSurviver preferred to vote off those individuals who were not actively contributing to the benefit of the tribe. It seems that a high level of commitment, good quality contributions, regular availability online and/or strong computer/Internet skills acted as criteria that ensured learners a safe place in their various tribes.

When asked whether they had ever been voted off, nine learners indicated that they were. The follow up question with regards to the influence that being voted off had on their learning process, 3 responded that it influenced them positively and another 3 negatively. The remaining 3 learners suggested that their learning were not influenced in any way by the fact that they were voted off.

Group constitution

Shared knowledge and authority, and heterogeneous groups of students are essential characteristics of collaborative classrooms (Tinzmann et al: 1990). Thus, a critical characteristic of a classroom

where learners are supposed to work together is that learners are not segregated according to ability, achievement, interests, or any other characteristic. Tinzmann et al (1990) constitutes that segregation seriously weakens collaboration and impoverishes the classroom by depriving all students of opportunities to learn from and with each other.

The learners in this module were questioned about their preferences in terms of the tribal compositions. Ten learners indicated that they preferred homogenous groups where all the other learner have the same abilities as they did. Only 1 learner indicated that he/she preferred a group where the rest of the members are less able than him/herself. Four learners favoured a heterogeneous group where the other learners are more able than themselves.

In this module, learners were grouped based on their Internet literacy at the onset of the course. Learners were asked to take place on an imaginary line with experts in the field of e-learning on the one end of the spectrum and total novices on the other. Each learner was then given a number (either a 1 or a 2) where after tribes were formed by grouping all the same numbered individuals. This ensured that each tribe consisted of members with varying degrees of Internet literacy.

Even though the majority of the learners indicated a preference for homogenous groups, it was clear from the start of the module that the variety in skills levels, allowed the weaker learners to survive during the first couple of steep learning curves. Although the survey does not provide enough information in this regard, it is anticipated that further studies will show that the learners indicated their preference for homogenous groups, based on their perceptions with regards to the other members' willingness to contribute and their availability, rather than on levels of skill only.

Shuffling of tribes

By the end of Week 4 many tribes had established trust and a sense of group security. However, the original tribes had almost run out of members as learners had been voted off regularly at the end of each successive week. At this stage, all the learners who remained in the original 4 tribes were rearranged into 2 new tribes, namely Tribe 6 and Tribe 7. At the same time, some of the learners who were voted off in previous rounds decided to form a new tribe by themselves. They preferred doing this, instead of joining the, by now, totally dysfunctional Tribe 5 that was originally created to accommodate the expelled members.

Week 5 therefore was characterised by the side effects of radial change as learners were moved into new tribes. Members obviously needed time to settle into the new tribes, even though they had to deliver outputs by the end of the week.

During Week 4, some of the original tribes had functioned efficiently with the remaining members each contributing positively to the outcomes of the assignments. Other tribes, though, were ineffective and ridden with conflict. It was consequently interesting to see how the various individuals interpreted the changes in the formation of the tribes. For some it was an obvious relief to now be working with new tribal partners, whilst others felt shaken and stirred by the changes made. It is therefore surprising to find that only one learner indicated that his/her learning was influenced negatively, stating that '*... the collaboration wasn't on the same level as in the initial tribe.*' Three others noted that their learning had been influenced positively as the fresh perspectives added by the new members encouraged them. Yet another learner expressed delight by stating: '*I could at last experience the joy of working in a functional tribe.*'

There were, nevertheless, quite a number of comments related to the disorienting nature of the changes. As one learner put it: '*I felt more confused ...*' and another bluntly stated: '*I did not like it!*'. Interestingly enough, some learners were thankful to experience a lighter workload because of the shuffle, whilst others found it disturbing to now find themselves in a tribe where all the members had the same abilities.

Conflict management

The main challenge faced in cooperative and collaborative learning is group conflict. Students need to learn to work together. It is not always something that comes naturally. However, by accepting conflict as an inherent part of many collaboration activities, the task is to learn how to manage their conflict dimensions.

It was inevitable that conflict were to be experienced during the course of the module. The very nature of the course, being online, having to work closely with others, being in the position where peers evaluate your work and may influence your marks, made conflict between tribal members inevitable. Whilst some tribes managed to deal with their differences without having sacrificed efficiency, other tribes openly communicate their hostile feelings towards one another. Says one tribal member *'I hated the first tribe ... It was wonderful to be able to work with real students [after the shuffling] and not just with a ghost lurking in the back, booing, but doing nothing else.'*

The survey shows that 14 out of the 15 respondents experienced conflict at some or other time during the course of the module. Some tried to down play the level of conflict by stating that they experienced mild irritations, rather than real conflict. Reasons for the conflict that was experienced ranged from irritation with learners who did not submit their contributions on time, unfairly judged the work of others, and refused to meet at times suiting the other parties, to full blown *flaming* that took place in the open forum used for communication.

Only one learner stated that he/she worked well together with the other members of the tribe and declared *'I didn't experience any conflict!'*

Grand prize

After some serious negotiations with the Dean of the Faculty, the leader of the course, Prof J C Cronjè managed to offer the *'sole Survivor'* a weekend away for 6 people at a nearby holiday resort as the grand prize. Although learners were informed that there would be a substantial prize for the learner who remained standing after the module was complete, the nature of the grand prize was only announced halfway through the module. As such, some learners were not influenced positively or negatively in terms of their levels of motivation. One learner reports that the *'... information was conveyed at a very late stage of the game. It therefore didn't really influence my learning process - although it might have if I was informed earlier on!'* Another learner commented *'I do not know if it would have made any difference in any case. I am not the kind of person that work because there is some prize at the end of the game'*. Yet another learner stated *'Maybe if it was a trip for two to France or Italy it would have had a significant influence.'*

Only 3 learners indicated that they were motivated to work even harder after the announcement due to the nature of the grand prize. One of these learners commented *'I worked harder because my wife wanted to divorce me several times and a good weekend will cheer her up.'*

The reality game

In the survey, learners were asked to comment on the positive and negative influence the metaphor of the reality game had on their learning process. Quite a number of interesting facts surfaced as the data provided by the learners were analysed. In their comments, at least 3 learners explicitly identified competition as one of the strong motivators that was introduced by the Survivor game, whilst 2 others stated that they were demotivated by the competition element.

Some of the positive influences of the game included the peer support that learners got. Many learners commented that they were positively encouraged and supported by others, sometimes even by those who

were in different tribes than themselves. Others stated that the forced collaboration affected their learning process positively.

The negative elements of the game as identified by the learners included the voting and the conflict experienced in some of the tribes. Learners also commented negatively about the exorbitant costs involved with being online for hours on end, the heavy workload, the asynchronicity, and the unavailability of certain members.

Interestingly enough, a number of students remarked that they thought the game was introduced to euphemise the effect of the heavy workload the module required. *'The game was actually the sweetener to six weeks of real time torture'*. Another learner commented that he/she felt that *'it was called a game so that we should not become so uptight and stressed. Perhaps it was also meant to cover the workload under the metaphor of it being a game.'* The same learner continued by stating *'To me it was everything but a game - it was a lot of hard work and asked for many a lonely night in front of my computer'*.

Summary

Literature tells us very little about the way adults experience learning games in an online environment. The focus of a later study will fully explore the dynamics and role of games in this particular web-based environment where adult learning was facilitated. For the purpose of this paper, though, we started by explaining how the elements of a reality game were introduced in an online course for adult learners and followed through by examining some of the complexities involved in presenting a learning module with a metaphor such as Survivor.

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