Introduction

Chapter 8 concludes this thesis with a summary of the research questions and results, the problem statement and rationale, the literature review, and the research design. It will also include three reflective sections, namely, a methodological reflection, a substantive reflection, and a study-specific reflection. Lastly, the chapter will close with some recommendations for policy and practice, recommendations for further research, and recommendations for further development work.

Summary

The aim of this study was to investigate the interactions, and the complexities of group functioning that presented themselves in an online module on the topic of elearning that was presented by means of a metaphor of a well-known television reality game.

The rationale for the study stems from various encouraging indications in current literature that point towards a greater understanding of the complexities and multiple levels of interaction that take place in online courses (Warschauer 1997; Botha 2003). Furthermore, although there is a growing trend to use computer games for educational purposes, very little exists in the way of concrete guidance to explain how the playing of adventure games online by adult learners could maximize the personal and educational benefits that they might receive from this kind of activity. In this field of elearning, which may well dominate the format of education provision in many countries for centuries to come, in-depth research is scarce indeed.

The purpose of this study was thus to investigate the role of the metaphor of a game in the interaction, dynamics and complexities of a web-based module on the topic of elearning, that was presented to adult learners in a master's programme at the University of Pretoria.

The main research questions that were addressed by this study were:

1. What are the implications of playing games with adult learners in an online learning community?

2. How did the web-based module on elearning, that was inspired by the ideas from the reality television show *Survivor©*, affect the interactions of, and the dynamics between adult learners?

To make the answers to the above-mentioned questions more explicit, I formulated four sub-questions:

1. How could a web-based module on elearning be designed so that it closely resembled the game structure of the *Survivor©* reality show? (These sub-questions are addressed in chapter 4)

2. How did this module develop over time, and what were the key issues that emerged? (These sub-questions are addressed in chapter 5.)

3. How did the reality game elements affect the various types of interaction and the group's functioning as a whole? (These sub-questions are addressed in chapter 6.)

4. What are the complexities involved in teaching and learning by means of a module that is based on a metaphor such as *Survivor©*? (These sub-questions are addressed in chapter 7.)

Before I attempted to respond to these questions individually in chapters 4 to 7, chapter 2 explored the current literature that deals with the various components that underlie this kind of research. A conceptual framework that combined the element of play, adult learner characteristics, motivational theories, group formation issues, the online learning environment, and

the different types of interaction formed a point of departure for this study.

Chapter 3 reviewed the research design that I used to address the research questions. This chapter indicated the dual approach that I followed in the study by focusing to a lesser extent on the design of the module and in more detail on the research study which explored the interactions that took place in actual online module that was based on the *Survivor©* metaphor. The overall focus was *on qualitative interpretivism* as the goal of inquiry. The design of the module was undertaken a design experiment and the ADDIE model as the instructional design system. The research study made use of a case study methodology and brought in elements of ethnography and hermeneutics for interpreting the material that was gathered throughout the module. The chapter concluded with a section that argued that trustworthiness and authenticity are valid quality criteria by which the research may be evaluated.

In response to the first sub-question that deals with how the design of the module resembles the game structure of the reality show, *Survivor©*, chapter 4 described the design of the *CyberSurfiver* module on which this research is based. I explained how the *CyberSurfiver* game worked, and how the various game elements, such as the Immunity Challenges and the Grand

Prize, were introduced to the learners. The context for the case was described and situated within the online learning environment.

Chapter 5 focused on the effects that a reality game such as *Survivor©* exerts on the dynamics and complexities of group functioning in a web-based module. The discussion started with a description of areas of special interest as these began to manifest from week to week. Each of these summaries is followed by a commentary on the significant happenings that occurred in each consecutive week. The chapter thus responded to the second sub-question by showing how the module developed over a period of time, and focused on the key issues that emerged each week.

The third sub-question related to the effect that the reality game elements had on the various types of interactions that became evident in learner functioning, both individually and in groups. Chapter 6 paid specific attention to the following features:

- group composition and the shuffling of the groups
- elements of isolation (on the CyberIsland)
- tribal and individual assignments
- reward and immunity challenges
- tribal councils
- the practice of voting
- the Grand Prize

The fourth sub-question related to the complexities involved in teaching and learning by means of a module that is based on the metaphor of *Survivor©*. Chapter 7 dealt with how I focused on, described and interpreted the following factors: the development of covert and overt dynamics in the group and the way in which they related to learning outcomes and expectations, peer support, feedback, peer assessment, interpersonal conflict, the use of language, stress factors, time concerns, competition, humour, cost implications, participants' personal lives, synchronous and asynchronous, the online culture communication, and retention rates.

Discussion

This section discusses the lessons that can be learned from the *CyberSurfiver* study. In summing up the research, I will pay specific attention to the methodological, substantive and study-specific reflection on the study.

Methodological reflection

The main body of the research focused on the *CyberSurfiver* module as a case study. It used elements of ethnography and hermeneutics to explore the effect that the *Survivor©* metaphor had on the interactions that took place among participants. The remainder of the study analysed how the actual design of the *CyberSurfiver* module

affected the learners and the quality of elearning that took place.

It is important to emphasise that the main focus of the study was not on the design experiment as such, but rather on the interpretation of the interactions that resulted from introducing the game metaphor as a means for providing an intensive elearning experience over a period of six weeks. Because of this, it was essential to examine in some detail the process of design and to comment on the changes that were made throughout the design, development and implementation phases. This approach made it possible for subtle nuances to be identified and explored in more depth. These complexities could easily have gone unnoticed had the research focused solely on the summative effects of the intervention. The findings of this study provide insights into the complexities involved in the *development* of knowledge and skills in an online learning community when using a game metaphor.

Because of my personal involvement in the design and the implementation of the *CyberSurfiver* module, I had to guard with great care against picking out only those results that would reflect in a gratifying way on the whole enterprise. It was inevitable that I would be tempted to downplay the significance of certain adverse developments among the findings because some of them related directly to decisions

that I made in both the design and implementation phases. But it is a temptation that I hope I have resisted. In addition, my close collaboration with other researchers involved in the same case helped me to remain as impartial and realistic as a researcher can be. With hindsight one would perhaps have not made the same mistakes. But then without the research, how could one know what the mistakes would be? It would nevertheless be good to have a research team working on exactly the same topic rather than a number of researchers with different areas of focus working on the same case. I furthermore strongly believe that one learns one's most meaningful and helpful lessons from those things that do not work the first time around, and that a researcher may well benefit most from the things that go wrong.

Even though my close relationship with the design and the implementation of the *CyberSurfiver* programme could have clouded my objectivity, it also allowed me to establish a much closer relationship with the learners. Whereas the other researchers would have to work on the texts that were generated during the six weeks, or on transcripts of the interviews and focus group sessions, I personally understood the context and the climate that prevailed at the time of the messages, posts, tests, and assignments that were written. I imagine that my interpretation of this study might have been rather different if I had approached it from

the point of view of a learner-participant rather than from that of the facilitator-participant.

This study relied on an extraordinary large number of data sources. This enabled me to undertake extensive triangulation on the findings. I believe that this is one of the strengths of the study, and it took place because the data sources were all dissected and reassembled in order to create an ordered representation of the interactions that took place. The method of numbering data sources also helped me to crystallise my thinking as I considered the data from various point of views.

A possible strength of the study is the fact that there was a time gap of approximately 18 months between the time that the module was facilitated and the time when I began to write up my findings for the study. By allowing time to pass, I could allow the strong emotional attachment that I felt towards certain aspects of the module to loosen and dissolve. I was thus able to be more objective in my approach towards the material.

Throughout the study, I aimed to avoid the decontextualisation of the findings. I tried to remain true to the complexity of the dynamics and the interactions that took place during the six weeks of the module and aimed accurately to project the multiple levels of involvement, and the

shades of opinion and emotion that prevailed among the learners.

In designing the *CyberSurfiver* module, I grounded the teaching and learning activities strongly in the principles of constructivism. Active and self-directed learning elements whereby learners construct their own knowledge on the basis of a number of helpful guidelines and supportive scaffolding, were explicitly built into the module of the design. The intention was that learners should develop the competencies that were reflected in the learning outcomes through active engagement in authentic work even though the metaphor took them into a game-like learning environment.

The fact that the module was underpinned by a constructivist epistemology possibly influenced my research approach to the study as well. In some ways, this study shows that constructivism and interpretivism are highly compatible. As far as the study itself was concerned, I found that I was satisfied with the transactional nature of the research, the flexibility of the study, the subjectivity of the findings, and the fact that I had constructed knowledge on the basis of my own predispositions because the constructivist nature of the module gave me the opportunity to work in just such a mode.

The module was furthermore designed in a design experiment format so that formative

assessment and feedback would provide opportunities for refining the educational design. The design experiment, which was originally based on a combination of theoretical principles and prior online teaching experiences, evolved throughout the six weeks during which the module was facilitated and it became a potent and challenging learning experience for those learners who were committed to becoming skilled at using the Internet as a teaching and learning environment. Even though the main goal of inquiry was interpretivist by nature, some of the functional findings relevant to the design were presented in this thesis with further suggestions for improving the module's design.

The study highlighted those aspects of the design that worked and those that did not, and suggested how the design might be adapted to improve integration between the learning outcomes and the performance of the learners. But there still remains an abundance of untapped data by means of which the module can be explored and studied as a fully-fledged design experiment. The focus of such studies would not necessarily have to confine themselves to exploring the role that the game elements played in the interaction and dynamics, but could focus rather on the complexities of the learning interventions as an interacting system.

It is important to note that some of the findings were not related directly to the introduction of the game elements as such, but arose as a result of the fact that the module was presented in an online environment. These findings may also be valuable in the broader context of online learning. It is hoped that this study will help researchers and designers better to understand the real-life demands made by online designs and the adoption of online designs.

Substantive reflection

In this section I would like to relate the findings of this study to the existing body of literature. Play is a basic part of the behaviour of most mammals, including human beings. While most of the literature on play deals either with animals or children, there are scholars who acknowledge the existence and significance of adult play (Fagin 1981; Smith 1984).

Those scholars who recognise the value of play in adult learning argue that play and games help to focus learner attention, and increase a learner's positive affects, motivations, and ultimate learning (Krasnor and Pepler 1980; Malone & Lepper 1987; Chen *et al.* 1998; Garris *et al.* 2002). Cordova (1993) confirms this statement and states that the introduction of game elements may augment and enhance a learner's enjoyment, attention, effort and

concentration.   The *CyberSurfiver* study provided evidence that this is true – even in an adult online learning environment. Many learners indicated that they had enjoyed the creative way in which the module was presented and commented particularly positively on the Reward and Immunity Challenges.   But some learners admitted that they did not enjoy playing games, and struggled to do so because they were much older and presumably their life preferences and habits had already settled into patterns that worked for them.   But these learners nevertheless participated actively and their artefacts demonstrated a high level of learning and personal growth as a result of the module (This incidentally reflects rather provocatively on our widely prevalent Western fears of ageing and the ageing process.)

There were also learners who battled at first to understand how the reward and immunity challenges fitted in with the tribal and individual assignments. It is thus important to remember that adult learners need to understand *why* they need to learn specific things (Tough 1979; Knowles 1984, 1990) and in what way components are relevant (Decker 2002). Once they had understood its purpose, learners demonstrated a willingness to participate even more actively.

Knowles (1990) describes adult learners as people whose self-concept tells them that they are responsible for their own decisions.

Lindeman (1926) also argues that adults have a profound need to be self-directing and that they enjoy a process of mutual inquiry rather than having knowledge transmitted to them. But our experiences in *CyberSurfiver* showed us how many otherwise apparently self-directed adults regressed to more atavistic traditional roles and expected the teacher to simplify the learning materials before she had shared them with the learners – especially in those cases where the material would ultimately be evaluated. These learners resisted any attempt from myself to free them from their ingrained teacher dependency.   Some learners also indicated that even though they had always regarded themselves as firm constructivists, they would have preferred a more instructivist approach in this module.   Many of the learners had internalised traditional and even rigid mental habits, biases and presuppositions from their previous learning environments, and even though there I had placed a great emphasis and value on individualism in this module, the constructivist nature of the module was not negotiable.   I had, in accord with Decker's (2002) suggestion, consciously and deliberately built activities that promoted active learning and learning by *doing* into the very fabric of the *CyberSurfiver* module.

Huizenga (1950) argued that competition pushes one beyond mediocrity because a determined learner will force himself/herself to improve certain skills and gain new ones

in the quest of competing for first place. *CyberSurfiver* learners were either strongly encouraged or discouraged by the progress they saw others making. Some of those who battled with the technical challenges found it discouraging and demotivating to see the high levels of skill and quality demonstrated by others with more advanced technical abilities. Conversely, there were learners who had earlier identified themselves as Internet illiterates with very limited skills, who were positively motivated to improve their skills by observing the skills and progress of some of their fellow learners. It seemed to me as though these learners had decided: 'If he and she can do it, so can I.'

Interestingly enough, the main source of competition had very little to do with the *CyberSurfiver* game as such. I observed a strong sense of competition among the learners in the MEd Group with regard to their final marks for each of the modules, and many learners worked extremely hard because they aimed to graduate with distinction. Biggs (1987a) refers to this trend as *an achieving motive* that is based on competition and the ego-enhancement that goes with obtaining distinctions. This module was thus no exception to the rule, and a strong emphasis on marks was evident throughout the module.

Csikszentmihalyi (1990) states that *flow* is the holistic sensation that people feel when they act with total involvement. Together with a

loss of awareness of time that is going by and the state of mind that includes a deep sense of involvement and immersion, nothing else seems to matter to a person who is engaged in an event with *flow*. In *CyberSurfiver*, many learners told of how they found themselves working on one of the assignments until the early hours of the morning – without having realised how late it had become.   Their accounts of their learning experiences were characterised by absorption, enjoyment, and intrinsic motivation.

In contrast to this, some learners also indicated how their technological challenges had hindered their progress. They would thus have agreed with Csikszentmihalyi (2002) who says that if the learners are to achieve flow, they need to be able to act without thinking and without interruption. Although one hopes that with advances in computer and Internet technology, and bandwidth development, such factors will be less important in the future, computer-related problems were undoubtedly a major hindrance and deterrent for learners in the *CyberSurfiver* experience.

The flow experience can only happen when the perceived challenge and the level of skill required are in balance (Csikszentmihalyi & Csikszentmihalyi 1988; Ghani, Supnick & Rooney 1991).   In *CyberSurfiver* it often happened that learners perceived the

assignments to be more difficult than it actually were – or were intended to be. When learners experience computer difficulties, they often agonise about whether they are caused by their own lack of capability and skills, or whether they are 'real' computer problems. It was encouraging for me to notice that even though some learners perceived their own level of skill as limited, and the challenges as enormous, they simply exerted extra effort and pushed themselves beyond what even they thought was possible. There were of course also (fewer) learners who gave up so soon as they encountered challenges they felt they could not handle.

Burke (2000) and others argue that computer games bring people together and that most people who play games do so in a social environment together with their friends. The one aspect that the *CyberSurfiver* module highlighted was the need for the provision of *social interaction* for learners in an online environment. Not only did they break the rules that stated that they should only use the Internet as their sole medium of communication by phoning each other and by organising face-to-face meetings, but they also relied rather heavily on the synchronous support that their fellow learners could supply by means of applications such as *Yahoo Messenger*. Many learners commented on the affective value of the synchronous communication because they were able to make contact

with others (the facilitator included) online when they needed vent their excitement because they had just mastered a particular skill or because they were frustrated by having to rerun a procedure that would still not function properly for them.

O.Houle (1988) identified three categories of motivational styles in learners; these are goal-oriented, activity-oriented, and learning-oriented styles in learners. *CyberSurfiver* presented learners with each of these three categories. While some learners were motivated by the possibility of getting high marks (these were goal-oriented), others were interested in specific activities such as the InterWise session or the 'photo shoot' game (these were activity-oriented). And there were also those learners who predominantly enjoyed the *learning* process and understood that simply being able to be an online learner for a while was what was really valuable about the learning encounter lay (these were learning-oriented).

The six adult learning motivators (recognition, achievement, advancement, growth, responsibility, and challenge) identified by Herzberg (1959) also featured in the *CyberSurfiver* module. Learners flourished when they mastered particular technical skills, and enjoyed the explicit recognition that they received. Similarly some learners demonstrated high levels of frustration when they expected good marks and feedback

from their peers for work that they were proud of, and instead received lower grades than they had hoped for and less favourable feedback. The learners also enjoyed the fact that there were elements of progression that were built into the design and that they were able to build on prior successes in later weeks. They easily expressed their wonder about the growth that they experienced in their own levels of skills, knowledge and attitude. The learners furthermore demonstrated their acceptance of the responsibilities that were laid upon them by the tribal and individual assignments, and they indicated that they enjoyed the challenges – even though they were at times extremely daunting.

Lieb (1991) identified another six factors that motivate learners, namely social relationships, external expectations, social welfare, personal advancement, escape/stimulation, and cognitive interest. This study indicated the high level of value that learners attached to the social relationships that they formed with their fellow learners. It seemed that the tougher the module became, the more heavily they relied on their peers for support, both cognitively and affectively. Learners often wanted to be sure that they were on the right track by asking me (who was perceived as being in a position of authority) whether they were doing the tasks as I intended them to be done. Some of the learners pointed out that they were available to help others with

their individual tasks, and some even generously offered their services to the whole CyberSurfiver community, even to learners who were not in their tribes. The fact that professional progress and the possibility of career changes were based on their success in the MEd programme were obviously also key motivators in many learners' lives (hence perhaps the obsessive interest in marks and grades). Many learners indicated that this module was by far the most creative and entertaining module that they had ever done even though they had to work hard and found it extremely challenging at times. At least the challenges and games precluded boredom and provided a change from the stereotypical kind of instruction that they were accustomed to. But some learners demonstrated a willingness to learn for the sake of learning because they had inquiring minds and exhibited cognitive interest in the topic and in the processes involved in elearning.

As this study has shown, the learners also faced a number of less pleasant obstacles in their path to learning such as a lack of time and money, scheduling problems, low levels of self-confidence, technical problems and domestic challenges.

The CyberSurfiver learners all demonstrated Maslow's hierarchy of needs (1954) in that they responded to their unsatisfied needs. The design of the voting component

unsettled the safety needs of some, while others strongly articulated their social needs by yearning for opportunities for synchronous face-to-face communication.   Learners acknowledged the fact that their self-esteem needs were being met when they mastered specific skills and when they were not voted off at the end of the week. The most satisfying result is that many learners experienced the rewards of self-actualisation despite the large volumes of stress and the anxiety that overcame most of them from time to time.

 Malone and Lepper (1987) identified *four qualities* that should be included in designs if one wants to ensure that the learning environment is intrinsically motivating. These qualities are challenge, curiosity, control, and fantasy.   In *CyberSurfiver*, challenge was one of the most powerful individual factors that influenced the intrinsic motivation of the learners.   Learners often commented on how they had continued late into the night to complete difficult and challenging tasks.   When learners felt that they were making progress towards their goals and once they began to believe in their potential to be successful, their beliefs enhanced their self-efficacy and sustained their motivation.

The *CyberSurfiver* module was designed so that learners were given the topics of their assignments once a week.   One of the learners commented that she particularly appreciated the fact that all the assignments topics had not been handed out right at the beginning of the module because it had raised her levels of interest. Because of the creative approach that the design exemplified throughout the module, learners were keen to see what the next week's assignments entailed – especially since they had just survived yet another turbulent week. Once they felt safe and understood the structure, purposes and format of the module, they became more interested and curious about the novel assignments that were delivered on a weekly basis.

The *CyberSurfiver* learners often indicated their despair at not being able to *control* their learning environment.   They could not always control their computers or their connectivity, and they often battled to work collaboratively with other learners whose learning styles and personalities differed from their own.

In *CyberSurfiver*, learners were asked to visualise mental images of situations that were not actually present to stimulate their behaviour. The *CyberSurfiver* metaphor took them to an imaginary island (CyberIsland) and placed them in the context of the *Survivor©* reality game. By engaging in the tribal and individual assignments and the reward and immunity challenges, learners had to use their imaginations to meet challenges, exercise control and experience interpersonal motivations without directly participating in the imagined activities.   I

implemented what Cordova and Lepper (1993) suggest in their studies and presented *CyberSurfiver* in a fantasy context so that it would stimulate interest and learning.

Keller's (1983) model for motivation consists of four components, namely arousing interest, creating relevance, developing an expectancy of success, and producing satisfaction through intrinsic and extrinsic rewards.   In *CyberSurfiver*, the learner attention was increased with the use of novel and uncertain events.   The learners indicated that they were stimulated to look for information and that it aroused their levels of inquiry and investigation. In terms of relevance, many learners found their ignorance of the terminology used disconcerting and upsetting. Many of the concepts used were not familiar, and this decreased their motivation. But many others indicated that they appreciated the clear outcomes and the fact that they were made aware of the potential future use of the knowledge, skills and attitudes that they had gained through participation in this module.

CyberSurfiver's weekly assignments built progressively on one another, and this enabled learners to experience success in small chunks. The successful completion of one learning activity generated positive expectations for the next set of assignments. I designed *CyberSurfiver* to reward learners with incremental satisfaction because they had to cope with heavy workloads and endure high levels of stress and anxiety, and I did this by ensuring opportunities for success, and by providing feedback and intrinsic and extrinsic motivation.   Many learners expressed their satisfaction with the personal growth that they experienced throughout the module. Many stated that that they had never before learned as much in as little time.

More than 115 models of group development exist to demonstrate how groups progress over time (Conyne 2003). The *CyberSurfiver* module demonstrated quite a number of different stages that the group as a whole and the individual tribes, as small groups, progressed through. Initially the learners spent a lot of time trying to learn more about the tasks that they had to complete, and about each other in the small groups. This is similar to the *forming stage* in Tuckman's Small Group Development Theory and the *orientation stage* as described by Fisher (1970) and Tubb (1995). Once learners had began to understand what was involved and had managed to make contact with their fellow tribal mates, they experienced tension as they tried to establish communication rules and share their expectations. In this phase, which relates to Tuckman's (1965) *storming phase* and Fisher's and Tubbs (1995) *conflict phase*, learners clashed with one another as they competed for status, recognition and leadership in their groups.

As the tribes sorted out their roles and communication protocols, they started in most cases to work together in order to accomplish the stated outcomes. The one tribe that was dysfunctional because of personality clashes and logistical problems remained in the conflict phase.   But the end result was that both remaining members completed their learning activities as individuals.   Most tribes matured into the *performing* (Tuckman 1965), *reinforcement* (Fisher 1970) and even *consensus* (Tubb 1995) stages in which learners supported each other and reached consensus as they, the learners, compromised, selected ideas, reached conclusions, agreed on alternatives, and implemented strategies. Just as the majority of the tribes settled into these last phases, group compositions changed as a result of the shuffle, and learners had either to adjourn (Tuckman 1965) or close (Tubb 1995).   The *CyberSurfiver* learners then immediately started with new group development processes, which in some cases seem to have been a much more difficult process than it had been for tribes the first time around.   Whether a learner experienced joining a new tribe (after the shuffle) as constructive or unhelpful depended on whether a learner had experienced their first tribes as functional or not.

The literature agrees that groups function optimally if the minimum number of people is three and the maximum is between 12 and 15 (Samovar, Henman & King 1996; Catchart 1996; Wood, Phillips & Pedersen 1996; Atherton 2003; Millis n.d.). While all the *CyberSurfiver* tribes started out with six members each, after the first week, some of the tribes only had two functioning and actively participating learners left.   This meant that they did not have an optimal opportunity for working together as a group, and this made the shuffle that took place in Week 4 necessary.

Samovar, Henman and King (1996), Buher and Walbert (2004), and others emphasise that groups usually have a mutually interdependent purpose.   In *CyberSurfiver*, the individual tribal members relied on each other to complete their learning activities and to reach their goals.   But, as this study showed, not all the learners showed the same level of shared commitment, and learners often had to take responsibility for the completion of a group task as individuals.

As previous studies by Cronjé (1997) have found, the *CyberSurfiver* tribes demonstrated how learners often did not relate as closely to the members in their own groups as they did to others with whom they shared other commonalities such as being online at the same time.   The learning community that developed online was rather a result of like-minded individuals (mostly in terms of their levels of commitment and their willingness to take responsibility for their own learning) with similar schedules and availability, coming

together and sharing information while at the same time building supportive friendships.

One of the most basic needs of humans is to belong (Cathcart 1996; Myers 2003). In *CyberSurfiver* learners openly discussed their wish to identify themselves with fully functional groups in which the skills and attitudes that were needed to be successful were present.

In this module, learners did not strictly abide by the 'rules' of the game that were stated at the beginning. But these 'rules' were not strongly enforced in this constructivist environment, even though individual learners approached me to complain about the fact that fellow learners were not abiding by them. Many learners 'confessed' to having made telephone calls to other learners, or having discussed issues related to the game and the module at times when they had face-to-face contact with other learners. But there were also learners who refused to break the rules and got became very upset when tribe members suggested a face-to-face contact session in order to complete a tribal task. Interestingly enough, these same learners (who refused to break the rules) were ostracized and rejected by the others. To most learners, the fact that they needed each other was more important than the game and they relied on these illicit contact sessions to pull them through the most difficult times.

Cathcart *et al.* (1996) distinguished between behaviours and actions by group members that either increase or decrease group effectiveness.   The *CyberSurfiver* module demonstrated both these kinds of behaviour. Functional behaviour such as learners encouraging participation from other quieter learners, and supportive acknowledgements of difficulties, created an openly supportive climate in the group as a whole. But there were also learners who demonstrated dysfunctional behaviour by being disruptive, unproductive, and distrustful. The module demonstrated how important it is for members of a group to identify their norms for action and acceptable behaviour, for all members to accept and apply these norms, and for all members to fulfil the role expectations associated with them.

Each tribal member brought a different set of abilities to the group. In *CyberSurfiver*, some tribes embraced these differences and encouraged the utilisation of each member's strengths while discouraging a display of any skills that undermined the work of the group.   Other tribes did not acknowledge the contributions of the so-called 'weaker' members of the tribe and limited the pooling of their talents and skills, thereby limiting the gathering together of their potential resources.

The *CyberSurfiver* learners assumed a number of roles that affected the functioning of the group. Some learners

were relationship-oriented and actively supported other learners by offering their understanding and encouragement in difficult times. These learners praised others when they managed to master a particular skill and so created harmony in the group. Others were task-oriented and kept the tribes on track in terms of the outcomes that had to be reached. They encouraged others to participate and contribute, and they shared their own opinions freely. Self-centred learners could be identified by their stubborn, resistant, or distant behaviour. These learners often detracted from the overall effectiveness of the tribe.

Some studies indicate that the quality of interactions in a learning context improve in the online environment, and that the levels of interaction may even surpass those that are possible in traditional face-to-face classrooms (Lenhart, Lytle, & Cross 2001). The evidence that *CyberSurfiver* learners certainly communicated in a much more effective way than they did in the contact sessions of previous modules supports this argument. Learners indicated that they built relationships among themselves that would never have been possible in a face-to-face situation. Many reported that they worked closely together with people that they never knew before the module, and that the high level of collaboration that was needed to complete the Tribal Assignments made this possible.   High levels of learner-learner interaction also arose out of the need that

learners had for peer support to complete individual assignments. This need for support was not limited to technical help only; a strong network of affective support also emerged among learners.

There are some *CyberSurfiver* learners though who would doubtless agree with Muirhead (1999), who found that some learners thought that their learning were influenced negatively because other learners either did not do their share, or participated too late. The study highlighted many incidents of learner-learner interactions that were experienced both as positive and negative.

The *CyberSurfiver* module also reported on multiple interactions in terms of learner-facilitator exchanges. Because of the multiple roles that I had to play as a facilitator, my interactions with the learners were not limited to those that were only of educational value.   Much of the communication between individual learners and myself included personal dialogue, and the provision of support, feedback, motivation, encouragement and advice.

Learners who were accustomed to being authoritatively led and dictated to teachers needed a weaning stage during which the facilitator played an active role and provided extra scaffolding.   Once these learners have been conditioned to this new approach, the facilitator can slowly reduce

his or her active involvement. It is important to note that this weaning phase may take a long time: even months may go by before learners are ready to embrace the new approach and leave behind the conditioning of a lifetime. In *CyberSurfiver* we only had six weeks which, even if I had managed to organise more time to spend with such learners, would have probably been too little time to make a significant difference to their traditional approach to learning.   But without some kind of transitional support, learners who do not know how to learn in the online environment might well feel abandoned.

Learner-content interaction is recognised as a critical component of any learning environment (Moore 1989; Juler 1990). Many *CyberSurfiver* learners struggled with learner-content interaction because they were expecting to be provided with *detailed* notes and explanations that they could follow in a kind of recipe-style mode of learning. But the module was designed to provide learners with opportunities to interact with a number of resources and to take part in various online learning processes so that they could construct their *own* awareness of the issues and complexities involved in learning online.   One of the barriers to interacting with content is lack of time (Atack & Rankin 2002). This turned out to be one of the major limitations of the *CyberSurfiver* design. The scope of the learning content and its setting in an online environment

demanded more time than was originally planned for. The asynchronous nature of the online discussions also limited the meaningful dialogue that could take place in the short period of time during which the module ran.

Hillman, Willis, and Gunawardena (1994) contributed learner-interface interaction to the interaction taxonomy in order to reflect the role of technology in the learning environment.   *CyberSurfiver* showed that learner-interface interaction could influence learners' interaction with the learning content to a huge extent. The fact that many of the learners did not manage to access the introductory material to the module or the first week's assignments where they had been posted in *Yahoo Groups*, contributed to the fact that some learners fell behind. Then, because of the frantic pace of the module, they never managed to catch up again. Without learner-interface interaction, many of the other types of interaction (with content, other learners and myself), were not able to take place.

Burnham and Walden (1997) define learner-environment interaction as the mutual influence between a learner and his/her surroundings that either assists or hinders learning. While *CyberSurfiver* learners often commented on events in their personal lives, the design of the module did not make explicit allowance for these kinds of revelation. Some of the learners noted that

they developed a better appreciation and understanding of their fellow learners as they got to know them better through online interactions. They intimated that once they understood the cultural, social and physical circumstances of others, they were far better able to be more accepting and open in their interactions with these other learners.

Study-specific reflection

This section focuses on the research questions in order to show what this research has contributed to the scientific body of knowledge. As it would be impossible to touch on all the complexities that surfaced in my analysis of the sources, I will only summarise some of the findings below.

Sub-question 1
How could a web-based module on elearning be designed so that it would closely resemble the game structure of the Survivor© reality show?

This question was addressed in chapter 4 where I identified the *Survivor©* game elements that were included in the design of the module. The elements that formed the backbone of the module included the

- group composition,
- isolation on CyberIsland
- tribal and individual assignments
- reward and immunity challenges
- tribal councils
- voting process

- the Grand Prize

The chapter also aimed to show how these elements were introduced in the module on a weekly basis.

Sub-question 2
How did this module develop over time, and what were the key issues that emerged?

Chapter 5 addressed this question and aimed to provide the reader with an in-depth view of the main events that took place each week. After the initial introductory contact session, Week 1 was at first characterised by an uneasy silence and limited interactions, and later by panic-stricken learners frantically trying to make contact with each other. Week 2 started with an emergency tribal council that aimed to explain the context of the game, and to address learners', and my own, expectations concerning the module. Week 3 found the learners exhausted but satisfied with their progress and the accomplishments of the previous 2 weeks' tribal and individual assignments. A synchronous *InterWise* session provided us with another opportunity for a tribal council (this time online and with voice technology). While learners made use of the opportunity to voice their frustrations and fears, they also referred to the exponential levels of personal growth that they experienced.

Week 4 started slowly because it began with a public holiday that extended into a long weekend, but it ended on a high note with learners actively participating in a critical discussion of the synchronous InterWise session the previous week. By the end of this week, the nature of the Grand Prize was finally revealed. Week 5 saw a change in the focus from a more technical approach to dealing with the topic of elearning in a more holistic manner. The tribes were shuffled and learners struggled to find their feet as they tried to make the necessary adjustments. The week was also characterised by a lively debate about the need to write a formal online test.

Some of the learners initiated the formation of a new tribe at the beginning of Week 6, while the other two remaining tribes were by then already functioning effectively. The electronic test and survey was conducted in this week. The week and the module ended with a debriefing session, our last tribal council. In it learners had the opportunity to talk freely about their experiences and the sole *CyberSurfiver* winner was announced.

The key issues that emerged included, among other issues, group composition, peer assessment, peer support, stress factors, competition issues, synchronous and asynchronous communication, humour, feedback, language issues and time constraints. These key issues evolved in

the six weeks during which the module ran, and are discussed in more detail under the sub-heading of sub-question 4 (below).

<u>Sub-question 3</u>
How did the reality game elements affect the various types of interaction and the group's functioning as a whole?

Chapter 6 focussed on how the game elements identified above influenced the workings of the group. It discussed some of the complexities that became evident in learner functioning, both individually and in groups. Learners responded diversely to a question that asked about their impressions of the *CyberSurfiver* metaphor. Some liked it and found it motivating while others who, even though they indicated that they found it fascinating, hated it. The learners also commented on the initial group composition as well as the tribal shuffling that happened in Week 4. Once again there were diverse opinions. Those learners who experienced the initial heterogeneous tribe they were in as fully functional, found it hard to adapt to the change that meant that they shared similar skills with other tribe members. Other learners who initially found themselves in dysfunctional tribes, flourished in the new composition.

Many learners expressed feelings of isolation, and while some broke the rules and made face-to-face and telephonic contact with others, most learners used

Yahoo Messenger to interact with myself and fellow learners for much-needed contact. A strong supportive learning community that crossed tribal boundaries evolved throughout the module and formed between those learners who shared similar outlooks in terms of their commitment to learning. This strong supportive learning community was available for synchronous communication by means of instant messages.

While most learners indicated that although they were severely tested as they engaged with the individual assignments, they also found them challenging and motivating. Learners went out of their way to support each other by sharing their knowledge and skills. Even those learners with limited prior Internet experience shared their 'solutions' to problems that other learners experienced.

The collaboration necessitated by the difficulty of the tribal assignments once again varied from tribe to tribe. Some functioned well. Learners accepted various roles and they contributed their particular skills. But other tribes were ridden by conflict and experienced high levels of frustration. It became clear the facilitator has a role to play in teaching learners the basic skills that they need to enable them to collaborate via the Internet.

Most learners indicated that they found the immunity and reward challenges interesting and motivating and that they actively competed with their fellow learners to win. The competition element was enjoyed by most learners, although some learners indicated that they were not usually motivated by playing games or by competition of any kind.

This study demonstrated a very different voting pattern from that which was evident in the *Survivor©* game show. Learners voted off those individuals who did not participate actively or did not contribute to the learning activities in a helpful and constructive manner. Voting in the first couple of weeks was therefore not a problem because tribal members used it as an opportunity to rid their tribe of non-participants. But as numbers began to dwindle and all surviving learners were participating with enthusiasm, it became more difficult to vote. It was interesting to note that only a small number of learners actually voted during the last two weeks; most preferred to leave the 'decision' to the computer that randomly selected someone to be voted off in those cases where no one had cast their votes. Learners also appreciated the fact that they could serve on the 'jury' on which they would have an opportunity to vote again, during the last round, for the sole *CyberSurfiver*.

The tribal councils provided learners opportunities to voice both their concerns and enthusiasm. The tribal councils

became valuable formative feedback sessions from which information that influenced the design of the module was gathered.

While some learners indicated that they worked harder because of the Grand Prize, most learners denied that the Grand Prize exerted any effect on their learning. Interestingly, some of the learners who did not experience the Grand Prize (which was a weekend away for a family of six) as a motivating factor in their learning, participated with high levels of enthusiasm when the prizes for the reward challenges (a graphic attachment) were at stake.

In summary, it seems fair to say that the game elements had a profound influence on learners' levels of motivation and enthusiasm, and that they demonstrated how the power of comradeship can influence the morale of a group. The game elements seem to inspire a spirit of friendly good-fellowship rather than one in which competition and rivalry dominated.   In addition, the introduction of the *Survivor©* game elements into the online learning process opened up previously unexplored avenues of incidental learning.

Sub-question 4
What are the complexities involved in teaching and learning by means of a module that is based on a metaphor such as Survivor©?

Chapter 7 explored some of the complexities that teaching and learning online by means of a game metaphor entailed. The various data sources show that most of the learners were obsessed with their performance because they wanted to achieve high marks for this module. But my main interest was get them to focus on the *experience* that they would gain from their involvement in the processes of elearning.

High levels of peer support were a significant feature of this module.   All the active learners offered their support to other learners at one stage or another throughout the module.   The support offered was not only technical but also affective.   Learners cooperated and supported each other because they all faced the same challenges and difficulties and because the module generated high levels of anxiety and stress as well as moments of excitement and enthusiasm in everyone.

Although I provided formative and summative feedback on the learning processes and assignments, the learners expressed a need for more detailed and personalised feedback.   Even after numerous explanations that the end products (such as creating a website and FTP-ing it to the server) were not learning outcomes that I would assess, learners continued to request feedback in the forms of *marks*.

Numerous problems relating to the peer assessment strategy that was followed in the *CyberSurfiver* module began to surface as the module progressed. Some learners found the costs of being online exorbitant and thus did not want to do the online assessment of other learners' work – especially in view of the fact that peer assessment did not contribute to the marks that they would obtain for the module. Apart from the problem of cost, others listed time constraints and the lack of uniform interpretation criteria for assessment as problems. Learners also requested qualitative feedback from their peers – instead of only a mark.

Numerous incidents of interpersonal conflict occurred during the course of the module. These centred around complaints about learners' availability and the failure of learners to contribute in good time to tribal assignments. Conflict also arose between learners with conflicting personalities and different views about the 'rules' of the game. It is clear that the designer of the course should allow enough time and space for learners to build meaningful relationships in the online environment, and that learners should be given constructive guidance about how to deal with the conflicts that arise. It is important to deal with conflict as soon as it arises because unresolved conflicts can seriously hamper the quality of an online learning experience.

Most learners experienced the fact that they had to participate in the module by using a second – and in some cases a third – language for communication, as problematic. Many learners reported that they initially felt insecure because of having to express themselves in a formal learning environment in a language other than their mother tongue. But most learners reverted to using their home language for communicating with their fellow learners. Most learners also were extremely accommodating to those who did not understand and would translate the essence of their discussions so that everyone could understand.

The *CyberSurfiver* module was not for the fainthearted. Learners were challenged to their utmost limits for a number of reasons. But whereas optimal levels of stress challenges learners to grow, extreme levels of stress over a period of time may achieve the opposite effect. Our experience in *CyberSurfiver* showed us that too much stress inhibited learning and higher-order thinking in some learners while others outperformed themselves as a result of it. I would like to suggest that the high levels of stress could not be attributed to the introduction of the game elements, but that other factors, including a Hawthorne effect (Franke & Kaul 1987), influenced these levels. This particular module is possibly also the most talked about and hyped module of the entire MEd degree. Another factor

that might have made the module stressful is the fact that the module was presented totally online. It is too early to predict whether this hypothesis will be confirmed, but a similar module (offered online and using the game metaphor) that was presented this year with another group of MEd learners, showed comparably high levels of stress and anxiety – even though the module was presented in a much less threatening way than the *CyberSurfiver* one.

Most of the adult learners in the *CyberSurfiver* module commented at some or other time during the course of the module about the time constraints under which they laboured. While many of the time pressures might have been caused by the personal circumstances of learners, I acknowledge that the magnitude of the workload and the asynchronous nature of the interaction between learners also contributed to their experience of not having enough time to explore the learning activities in any great depth.

While any form of unpleasant intertribal rivalry was rare, some learners obviously enjoyed the friendly competitive climate that the reward and immunity challenges encouraged. In addition, a strong undercurrent of competition existed among some learners, especially among those who were performance driven, that had nothing to do with the introduction of the game

elements and that was driven by their history in previous modules.

Many incidents of humour occurred and have been reported as part of this study. I strongly believe in the therapeutic power of humour, especially in an emotionally taut module such as *CyberSurfiver*. It is significant that there *were* so many incidents of humour amidst so much stress and anxiety. Perhaps indeed the stress and anxiety made the humour inevitable because it allowed learners to give vent to their negative feelings. I think that my encouragement of humour and my personal style of communication made the expression of humour acceptable among the learners. I wonder what would have happened if all humour and irony had been strictly banned from interpersonal communications in the module?

As the module progressed and as learners began to feel secure and safe in an established learning community, they began openly to share some of the events in their personal lives with other learners. Sometimes these 'confessions' enabled learners to understand each other better and accommodate each other more skillfully. Almost all the active learners shared something from their personal contexts with the rest of the group.

Most learners found the synchronous communication tools invaluable, and they

were frustrated if their tribal members were not available online at the same time as they were. But the asynchronous tools made it possible for learners with different schedules still to communicate – even though some learners often complained about the time that it took to discuss basics.

One of the major complaints about the *CyberSurfiver* module concerned the costs that it entailed. Learners were not used to have to spend long hours online, and even though free access was available on campus, this was not a convenient option for the majority of the learners who simply could not fit visits to campus into their busy daily schedules. Telephone bills became colossal, and this placed many learners in very difficult positions. Interestingly enough though, although most learners complained about telephone costs, they nonetheless did not scale down on their connectivity and continued instead to incur massive telephone bills.

Chapter 7 concluded with a section that discussed possible reasons for the relatively low retention rate (that indicated the high level of attrition in this thesis). Even though it may be argued that many of the weaker learners were voted off early in the game, and thus had a limited chance of success, it is also true that those learners who demonstrated a self-directed approach to learning remained in the tribes until much later in the module. These learners were

protected and supported by others who possessed stronger Internet skills simply because of their willingness to take an active part in the assignments and also because of their positive contributions in other areas. In one sense, the unique voting pattern ensured the survival of those learners who took responsibility for their own learning while getting rid of those learners who did not participate actively and who did not demonstrate their willingness to take responsibility.

Recommendations

The section below makes some recommendations about practice and indicates possible avenues that future research studies may address. It is important to state that the lists of recommendations below are in no way intended to be comprehensive. They simply refer to a number of issues that might have improved the design had they been properly incorporated into the *CyberSurfiver* module.

Recommendations for practice

This section makes recommendations about how the *CyberSurfiver* module could be redesigned. Some of these suggestions are not limited to online courses that are based on a game metaphor; they could also be relevant to other types of online teaching and learning. Many of these

recommendations are not new, but are included to remind designers of their importance in the online environment. It is recommended that designers and facilitators who wish to make use of a game metaphor in their teaching and learning experiences consider the following categories carefully: Pre-requisites, Contact sessions, Group formation, Technology, Facilitation, Design issues, Support and scaffolding, and Expectations.

Pre-requisites

- Draw up and publish a list of essential skills and prior knowledge necessary for performing the module so that learners without the necessary skills can do something about acquiring them *before* the module starts. For example, *CyberSurfiver* learners who did not have them could have benefited enormously from possessing the following skills:

  o Basic word processing skills such as creating and editing documents, highlighting, copying, and pasting text.
  o Basic computer skills that enable one to use the Web and email (including attachments) with ease.
  o Familiarity with terms like Web browser, online, Internet, World Wide Web, URL, Web site and Web pages.

  o The ability to upload and download materials from the Web.
  o The ability to format, compose, send, cut, copy, and paste email messages.

- Be explicit when stating the hardware and software requirements of the course.

Contact sessions

- Prevent chaos and confusion by having (1) an initial face-to-face contact session that explains the format of the module, and (2) a hands-on session in which one makes sure that *all* learners are able to access the virtual classroom, are able to locate the learning material, and are comfortable with communicating online.
- Schedule regular online contact sessions using synchronous software that allows for group and one-on-one communication.

Group formation

- Keep the dynamics associated with each group development phase (early, middle, end) in mind in facilitator planning and responding. If these phases are explained to learners, learners can be helped to accept whatever is happening as 'normal', and this can help them to accept difficulties

with some degree of understanding and equanimity.

- Deliberately design and include opportunities ('ice breakers') that accommodate the initial formation stage of the group's development so that learners will begin to feel more comfortable. Tolerance is often insufficient when learners do not appreciate each others' personal circumstances. In *CyberSurfiver*, learners were thrown in at the deep end in Week 1. The purpose of this was to ensure that learners would immediately realise the importance and necessity of working together. What happened was that those learners who did not actively participate in the activities of the first week never became part of the 'insider' group. They became what Wegerif (1998) calls those who are excluded from the learning community that forms early on in the course. Do not expect that much academic work will be done during the first week. Rather use the time to familiarise learners with one another and with the learning environment, to sign learner contracts, and to make sure that everyone is 'on board'.

- Divide learners into tribes on the basis of their individual strengths. Identify a number of team roles, such as:

  o Project Manager (the learner responsible for managing group deadlines and responsibilities)

  o Supporter/Caregiver (the learner responsible for making sure that everyone is 'on board' and actively participating)

  o WebMaster (the learner responsible for the technical inputs that are needed successfully to complete the assignments)

  o Quality Assurance Manager (the learner responsible for checking and double-checking that everything has been done in an acceptable way)

I am hesitant to label any one learner in a collaborative working group as 'the leader' because this title is often associated with power, influence and authority. Such a role is not desirable because what may happen that this person may become overburdened with responsibility, or, on the contrary, feel empowered to take decisions on behalf of the group without first seeking consensus from the other group members. It is therefore important to clarify the responsibilities of each role, and to ensure that each of these roles is represented in the collaborative work groups. It may also be a good idea

to provide some or other incentive for fulfilling each role well.

Technology

- In order to help learners to overcome their technology barriers, the facilitator should use commonly available and cost-effective technologies.

- The facilitator should also test the technology plan *prior* to the implementation phase in order to avoid learning later in the module that something does not work as he or she had anticipated it would.

- Always have backup or alternative plans in place and never rely only on a single technology.

- Ensure that at least one person in the team is proficient in the technology so he/she can help learners when they encounter difficulties.

- Explicitly design the first few exercises in such a way that learners will become familiar with the technology and its functionalities. Introduce early on communication tools such as instant messaging and a bulletin board and opportunities to use these because they have the capacity to enhance social interaction within an online environment. Synchronous communication can be used to ensure that all learners are familiar with assignments because questions and answers can be almost

simultaneous. This dimension is crucial because it alleviates feelings of isolation and loneliness.

Facilitation

- Appoint a team to teach the online module and assign different roles to each individual who assists with the various components of the teaching load (i.e. technical, administrative, learning support). The trend throughout the world in online learning is to employ *an entire team* to deal with distance education learners. Most distance education courses in the United States of America, for example, involve collaboration with technical specialists, have a course manager to handle administrative details, and rely on tutors to perform many of the functions such as discussing course content, providing feedback on progress, and the grading of assignments (Chen 2002). In South Africa, online teaching is still very much an individual endeavour and the facilitator of a course has to play a variety of roles that includes the provision of technical and administrative support. The *CyberSurfiver* experience emphasised the importance of having support at hand for the online lecturer. This study showed that it is hardly possible for a single facilitator to provide all the kinds

of support that are needed for presenting a module such as this one. At least one such a support person should be a tutor, whom learners can approach with problems about the administrative arrangements of the module, and possibly also with questions about assignments. A technology specialist is another important member of the teaching team. This person should be able to give learners an *effective* crash course in computer and Internet skills. Such a course should make learners at least proficient on the Web because many learners enter the module with limited computer experience or adequate knowledge of keyboarding. This type of support is also important as it creates a basic entry level on which the facilitator can then build during the rest of the activities for the module, and it will permit learners to concentrate on reaching the learning outcomes rather than spending their time on troubleshooting technical difficulties

- Introduce virtual office hours and split learners into particular time slots if the group is too big to deal with in a single session. Make these sessions synchronous by nature. Scheduling virtual office hours alleviates the pressure to be online at all times (a pressure that facilitators often experience). Such an arrangement

means that learners can rely on the presence and availability of the facilitator at a particular time, and can be secure in the knowledge that their questions will be answered in the next available contact slot.

- Lay down general guidelines for effective group work. Learners have to understand what is expected of them in terms of collaboration and cooperation, and should be provided with the opportunities to test their group and negotiation skills before the real module start. Set some ground rules right from the beginning and express expectations in this regard quite explicitly. Also define what constitutes appropriate social behaviour. This will minimise the chances that some learners will experience an overly heavy workload. It should thus be made quite clear *when*, *how often* and *in how much depth* all learners will have to communicate.

- Encourage participation in the community because some learners take a while to gather enough courage to submit anything at all.

- Make sure that learners know what to expect in online contact sessions. For example, in a synchronous learning intervention, learners may become anxious about costs or the fact that they will miss out on important information should they be

unfortunate enough to experience technical problems during a session. It is important for learners to know exactly *what* they are letting themselves in for. Interventions should at all times be a non-threatening experience for learners (unless the course outcomes prescribe otherwise).

Design issues

- Complete as much of the development work as possible before the module starts so that time is available during the module for revision and adjustments that are based on formative feedback.

- Not everyone may agree that learner participation in online discussions and/or peer assessment should be assessed and awarded marks. If collaboration is an integral part of the learning process, one way of giving learners an incentive to participate is by allocating a mark for the activity. While I wanted to reward active sharing of ideas, research, reflection, and knowledge construction as they became apparent through active online participation, I needed a mechanism to penalise those learners who remained silent with little, or no, work-related contributions. It is essential to provide a participation assessment rubric prior to the activity being done so that some learners will

be discouraged from posting irrelevant messages simply in order to maintain their posting averages. This practice can contribute to a lowering in the quality of the discussions and contribute to the 'noise' levels of the course.

- Peer assessment is not the universal remedy for all assessment problems. In fact, I regard the true value of peer assessment as being its ability to provide learners with opportunities to learn from experience. Like many other valuable innovations in teaching and learning, the effort involved in peer assessment is front-loaded because it requires a great deal of advance preparation. If one is to involve students successfully in peer assessment, it is important to ensure that:

  o learners are fully aware of what is expected of them
  o learners understand the learning value that is derived from this type of assessment activity
  o the criteria by which the learners have to assess the work are clear and that everyone has a similar understanding of how they should be applied
  o a test run is scheduled before the learners are asked to do the first assessment for which marks will be awarded

o learners are provided with the opportunity to give both qualitative and quantitative feedback

o there is some sort of incentive is in place for those who do the assessment properly

• Instead of putting the burden of the votes onto the learners, I suggest that future designers investigate other options. One possible solution might be that the computer will randomly select the learners to be voted off at the end of each week. This may obviate the problem that we experienced in the *CyberSurfiver* module, namely that learners with high levels of Internet literacy were protected from being voted off, thereby leaving others more vulnerable.

• Be sure to include collaborative work because it forces learners to reach out to each other. If they reach out to each other more to others for help, their feelings of loneliness may be diminished. Collaborative work supplies learners with a structured context in which to work and it encourages communication between different group members.

• Remain conscious of the constraints of asynchronous learning when designing a module that requires active learner participation.

• Build in backup plans in case things go wrong – because they invariably do.

Support and scaffolding

• Design and develop a couple of support systems in advance such as a list of Frequently Asked Questions (FAQs), a step-by-step guide with appropriate screen dumps that show how to FTP (File Transfer Protocol), or how to produce a sound file. If need be, these support systems can be hid at first (most Learning Management Systems have a functionality of timed release built into them), and only release the documents after a specified date, or after successful completion of a specific task/quiz/assignment.

• Indicate to learners where they can get moral/emotional, technical and content-based support. In large groups, it is essential for the facilitator to protect himself/herself from the overwhelming flow of messages that could happen. By making it a rule that learners should first consult three other sources (such as a fellow learner, the technical support staff, the Internet) before contacting their facilitator with questions, the volume of messages can be reduced and learners still receive the support they need when they feel lost.

Expectations

- Draw up a written contract that explicitly spells out what you expect from learners, and, in turn, what the learners can expect from you, the facilitator. Ask learners to sign this learner contract at the first possible learning event and emphasise your expectations with regard to their involvement and expected outputs. Such a contract could for instance specify that learners should access the course regularly (at least once a day), that they should read all the correspondence in the course, and that they interact with each other on a regular basis.

- Explicitly state your expectations with regard to how often e-mails are to be read, how to abide by e-mail netiquette, and how to only address a group if a posting is intended for a large number of learners.

While perfectly functioning groups are probably not attainable, improving group effectiveness will help to make professional and personal group membership a more meaningful and profitable experience for the learners (Samovar, Henman & King 1996).

Recommendations for further research

Stokes (1997) calls for more use-inspired development research. Reeves (2000) agrees, and emphasises the need for formative research or design experiments instead of applied and basic research. The findings of the *CyberSurfiver* research study opened up a number of possibilities for further investigation and exploration.

Whereas I began the study with several questions that drove my inquiry and that influenced the initial factors that I looked for during data collection, I soon found key factors that were new to me emerging during data collection and analysis. These new key factors were unexpected patterns and features which only became evident to me during the course of the research. While they did not have a direct bearing on my guiding questions, these factors became the basis for new questions that I asked at the end of the study (thus enabling me to link them to the possibility of further research).

The following issues may be considered for further investigation:

- The conclusions as well as the limitations of this study elicit some fruitful and interesting possible avenues for future research that might be needed to complete the themes of the study. The most important

avenue for future research obviously lies in continuing the cyclical implementation of the metaphor. When this course is presented again, the designer may consider including in the research the suggested design changes so that the learning experience can be improved.

- Alternatively the *Survivor©* metaphor could be discarded as part of an attempt to compare the dynamics of a module without the metaphor treatment and the current *CyberSurfiver* study. One could also choose to present such a module with a less threatening game metaphor. Such a study has actually already followed the *CyberSurfiver* example: in 2004, the module was presented by means of a Soccer World Cup metaphor. I am not convinced that the amount of stress and anxiety that learners experienced in the *CyberSurfiver* module was only because of the use of the *Survivor©* game show treatment. One suggestion is that a future study repeat the module with only limited content changes, but with a similar course structure in place. In other words, the online module should also be presented in six weekly sections next time around with both collaborative and individual assignments in place. Instead of the reward and immunity challenges, these activities should be

seamlessly integrated with the module. A computer that randomly selects users to shuffle between groups could replace the voting, and the tribal council meetings could still be held – but under a different name. The hypothesis is that most of the dynamics that were identified as complexities in the current study were more caused more by the shift from a traditional face-to-face learning environment to one that is entirely online, and that this was traumatic for even the most advanced user of the Internet.

- Further investigation is needed into the various learning strategies and their impact on, and applicability to, the online learning environment.

- Second language speakers certainly have to sustain an additional cognitive load that is independent of the stated learning outcomes. I would be hesitant to argue that language proficiency is the only indicator of surface and deep learning approaches because one of the non-native speakers of English *CyberSurfiver* learners proved that language barriers could be overcome. In contrast, however, other non-native speakers of English did not display the same deep approach to learning, and this may, or may not, have been connected to their second language abilities.

Although the role that the use of a second language plays in an online module was not the focus of this particular study, it certainly is a topic that merits further exploration.

- A further study is needed to investigate the influences that make learners stay in a course of this nature despite it being so deeply challenging and demanding.

- Future researchers may wish to look into the fact that some learners in *CyberSurfiver* were motivated to try to accomplish the goals set by the learning assignments as well as the challenges even under strenuous circumstances. Why did some learners continue to pursue the tasks, even though there was a discrepancy between the perceived challenges and their skills?

- How can learners in an online environment be assisted to make the transition from dependent to self-directed learners? What is the online facilitator's role in this process? How did the influences of the learner's environment and previous academic experiences inform his/her understandings and how did he/she interact with the content, or with fellow learners?

- How can facilitators minimise the levels of anxiety that first-time online learners experience in a course such as *CyberSurfiver*? How can the levels

of stress be optimised to ensure positive energy?

Closure

This thesis began by stating that there is a tendency to look askance at learning situations in which learners appear to be playing and enjoying themselves instead of learning in a solemn and edifying manner. Light-heartedness and pleasure are not traditionally recognised as appropriate attributes of a learning environment. This study introduced the metaphor of the *Survivor©* game with the intention of experimenting with a creative and innovative approach to teaching – one that many learners indicated they found both stimulating and motivating.

This study also showed that games in an online environment are not *always* just fun and pleasure, nor are they modes that adult learners would automatically enjoy. As one learner commented in a personal discussion after the module was completed:

This was no game...

The dynamics, complexities and numerous interactions discussed in this thesis could each individually have been the focus of a separate study, and I often regretted that the scope of this study did not allow for explorations that were more exhaustive. But I

encourage other designers, educational practitioners and researchers to continue to conduct studies whose findings will produce future benefits for the broader online learning community.