Surviving the game:
Interaction in an adult online learning community

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Summary

In many Higher Education institutions, fun or enjoyment represents purposelessness, and is often characterised as something that should only be indulged in at specific times, in measured ways, and on special occasions. Play and games are thus often assigned a role that is secondary to 'real' work. This essentially artificial separation between work and play has had a profound effect on traditional learning theories and educational design.

The purpose of this study is to investigate the role of the metaphor of a game in the interaction, dynamics and complexities of a web-based module that is presented to adult learners. The uniqueness of this study is attributable to a combination of the following elements:

- games and play, and their motivational potential and value for adults
- adult learners, group complexities and dynamics, and the various kinds of online interactions to which learners are subjected
- the World Wide Web as a learning environment.

The case study upon which this thesis is based is the facilitation of a particular module that is presented as part of a two-year tutored Masters degree in Computer Integrated Education at the University of Pretoria. The presentation of the module simulated the spirit and atmosphere of *Survivor*© – an award-winning reality series that has been shown on national television.

This study aimed to throw light on the impact of the metaphor of the game on the complexities of adult learning in a web-based module. In order to do this, the following elements of the game were investigated: Group Composition, Isolation (on the virtual island), Tribal Activities, Individual Activities, Reward Challenges, Immunity Challenges, Tribal Councils, Voting, and The Grand Prize.

The interactions, dynamics and other complexities in the group were explored in terms of the following focal points: Learning outcomes and expectations, peer support, feedback from peers and the facilitator, peer assessment, interpersonal conflict, language issues, stress factors, time concerns, competition, humour,

personal lives, synchronous and asynchronous communication, costs implications, online culture, and retention rate.

An approach that is both qualitative and interpretivist informed this study. The study yielded a huge amount of rich detail for analysis. By crystallising and triangulating the qualitative results obtained from the data a powerful tool with which to investigate the interactions that occurred in *CyberSurfiver* was constructed. My focus was thus primarily qualitative because the study, as it was conceptualised, required for a detailed, in-depth interpretation of the case.

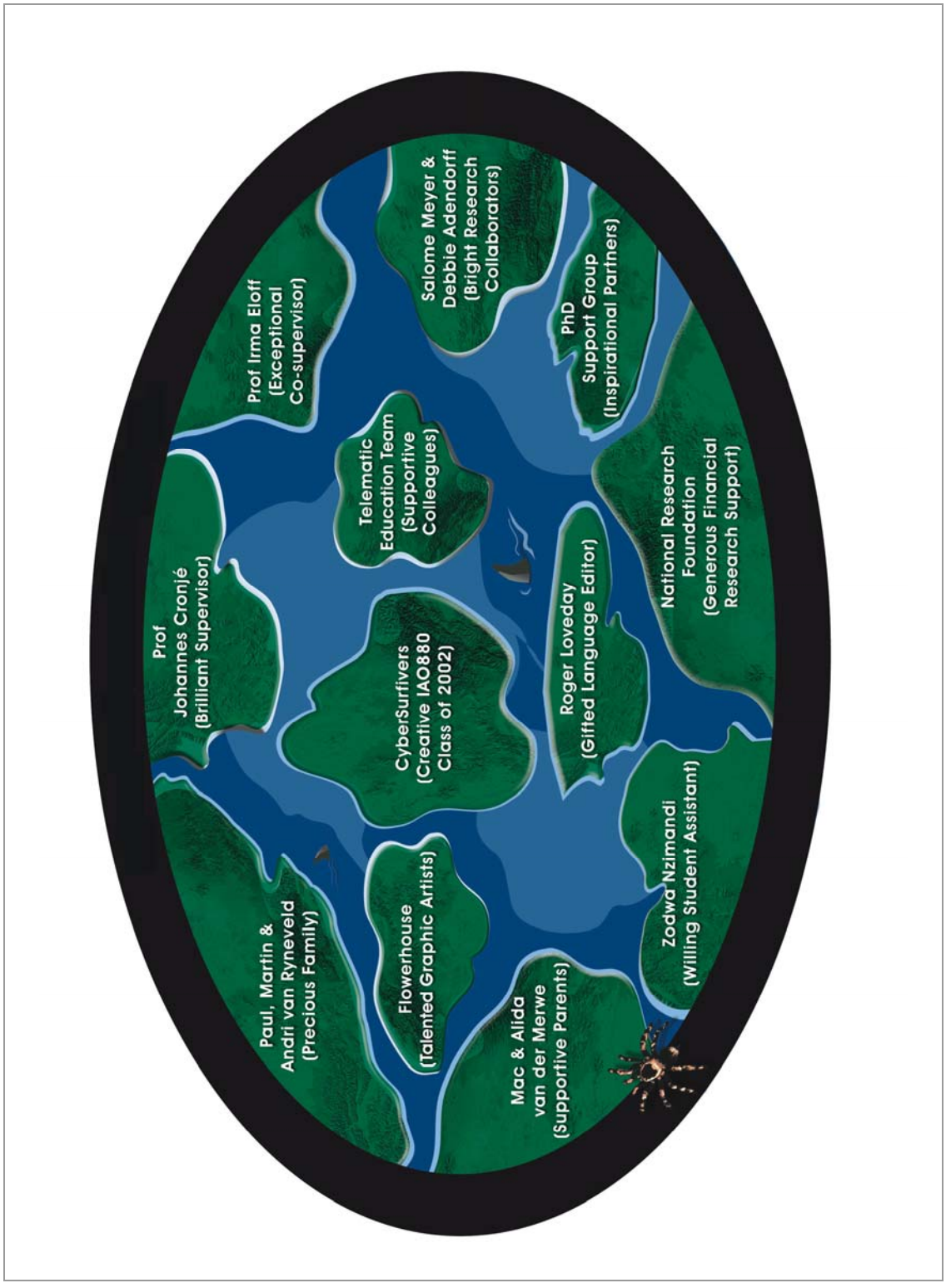
The study demonstrated how the *CyberSurfiver* design provided learners with opportunities to interact among themselves, with myself as facilitator – and with the content, the technology, and their various environments. It showed that interactivity need not be excluded from online learning – especially since the introduction of games can be successfully utilised to encourage interaction. It also highlighted the complexities, challenges, and concerns that both the learners and the facilitator face in a module with this type of design.

The findings from the study indicate that the introduction of a game metaphor can inspire high levels of motivation in adult learners and provide a stimulating, all be it challenging, online learning environment.

Keywords

Play, Fun, Games, Interaction, Group dynamics, Complexities of group functioning, *Survivor©*, *CyberSurfiver,* Game metaphor, Online learning, Adult learners, Intrinsic and extrinsic motivation, Flow.

Acknowledgement and Gratitude



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Introduction

There is a widespread tendency in modernist culture to define play and fun as the opposite of work. In the conventional teaching environment that we have inherited from centuries past, the use of play, pleasure and enjoyment as possible vehicles of education, is frowned upon by many academics and practitioners – even today. In the minds of many educators of the 'old school', suffering, silence, solemnity and (above all) deep seriousness are regarded as the outward signs of 'real' education. Any hint of pleasure or light-heartedness that might leaven the drudgery of education is regarded by such people as being somehow unsuited to the learning environment.

Caillois (1986), for instance, describes play as an activity that is unproductive and fictitious because neither (in his view) is customarily related to learning. The belief that students might learn better while they are simultaneously having fun and enjoying themselves is not universally supported in cultures that are the heirs of the Puritan tradition that dominated European culture for so many centuries. While many other cultures also regard permanent 'seriousness' as a sign of integrity and quality in education and social intercourse, my view is based on an appreciation of a traditional Christian-dominated European understanding of what 'real' education should be.

To use the metaphor of a game to teach adult learners is therefore to go out on a limb, especially since there seems to be consensus in the literature that adult learners do not particularly enjoy playing games (Nasseh 1999). Many studies assert that 'play' is predominantly a characteristic of young, developing human beings rather than of adults (Harvard n.d.; Beach 1945). Adult learners prefer not to be taught in a manner that may surprise them, or in a learning environment that might entail threats or uncomfortable challenges of some kind. But many of the techniques used in the teaching of children are ineffectual for teaching adults because adults are developmentally different and they bring into the classroom a wealth of life experience that the young do not possess.

In addition, to present a course to adult learners that is based on a popular reality show on television, and that is presented exclusively over the Internet, is a pioneering venture for all concerned. Although online learning has been and is being extensively explored and researched, it is still such a new field of study that even though many studies address topics that are related to web-based learning, experts are not in agreement about its true value. Teaching and learning over the Internet is characterised by its own unique set of

challenges, and these include user computer literacy, resources, stable connections, bandwidth, and many others.

This thesis combines the areas of study that I have alluded to above in that it reports on the use of a *game* in an online learning module that was presented to adult learners. It sets out to explore the complexities involved in teaching and learning in an adult online learning community that had adapted a metaphor of the television reality show, *Survivor©*. The *CyberSurfiver* module on the topic of elearning is central in this case study that investigates the interactions in an online course.

Rationale for the study

Warschauer (1997) identified a number of themes that follow from his study on computer-mediated collaborative learning. He calls for further research to investigate the questions below. The *CyberSurfiver* study may have relevance for some of these issues:

- How do learners construct meaning via online communication, and in what ways are such constructions similar to or different from how they construct meaning in other media? What tools of analysing written or spoken discourse are useful in studying online educational discourse?
- How do learners attend to content and form in online communication?
- How does participation in computer-mediated collaborative work affect learners' motivation and identity? How can computer-mediated projects be organized to assist students to see themselves as part of the community of speakers of the target language?
- What is the right role for teachers to play in the computer-mediated learning environment? How can teachers make an effective transition from 'sage on the stage' to 'guide on the side' (Tella 1996) that online education entails? What types of online interaction by teachers tend to facilitate learning and what types tend to stifle student initiative?
- How do gender, ethnic, linguistic, and cultural differences reproduce themselves online, both within a classroom and in cross-cultural long-distance exchanges? How can computer-mediated collaborative work be organized so that it is most inclusive to students from a broad range of backgrounds?

In response to these questions, I designed an artificial learning environment called CyberIsland, and related the learning activities in the module to the elements that

made up the *Survivor*© reality show on television.

The rationale for studying this particular elearning module through my personal interpretation of the interactions between the metaphor of the game, the adult learners and the online learning environment is to discover what would be most effective in the design and teaching of such modules in future courses of this nature.

Even though online experiences such as this one are individualised because of the implementation of different teaching and learning preferences, and because of variations in socio-cultural and educational backgrounds, the experiences I gained from this case study could help others who might wish to design courses of this nature to avoid a few of the problems that I encountered in the preparation and support of learners and facilitators. The proposed design and development elements could be helpful, especially in those cases where drastic switches in teaching methods take place, as they do in the development of an online course that uses the metaphor of a game and that expects a great deal of student-centred learning responsibility.

Motivation for the study

My interest in the potential of the Internet as a learning environment was sparked soon after my first exposure to the wonders of surfing the web in 1994. At the time, I was employed in a staff development capacity at a university with multiple campuses all over the country, and had to travel regularly to present face-to-face courses. Because I was the mother of two young boys, being away from home for days on end was not always convenient.

On a more professional level, I also often found myself wondering just how efficacious in the long-term one-day seminars and workshops might be for the staff on the various campuses that I visited. I always felt uncomfortable with the cost (and other) implications of these trips when I compared these factors with whatever value we thought we might be adding with the short and often one-dimensional training courses that we were presenting. I was therefore keen to explore the potential of the World Wide Web as the medium that would permit a more flexible approach so that staff could engage in the courses asynchronously and intermittently and in a way that would more efficiently accommodate their own over-extended lecturing schedules. Interventions could then also stretch over a longer period of time, and allow for more active participation from other members of staff. I therefore began to experiment with various ways in which the Internet could contribute to a more effective and therefore potentially more valuable learning experience for learners.

My own teaching style has always been experimental in that I add (wherever I can) intrigue, interest, variety, and excitement – as teaching tools. I have always enjoyed experimenting with alternative methods and approaches as I have searched for ways in which to improve the learning environment both for myself as a teacher and for my learners. I also have a keen interest in motivational theories and have investigated innovative ways of teaching that optimally support intrinsic motivation. I often used play and games in face-to-face adult learning sessions, even though such applications were mostly limited to icebreakers, warm-ups, and occasional role-playing. In the back of my mind I was always wondering and speculating about the feasibility of using games to teach adult learners in an online environment. When I approached Professor Johannes Cronjé with only some rather vague ideas for a possible study of this kind, he immediately supported my interest and stimulated the process by suggesting the *CyberSurfiver* concept.

The *CyberSurfiver* module on elearning evolved through numerous design cycles and was eventually presented to a group of master's degree learners from the University of Pretoria in the latter half of 2002. This module turned out to be a rich source of data for dealing with the complexities of learning online when using the metaphor of a game. As such, it forms the basis for this case study.

This study essentially combines four areas of study, namely:

- play and games
- adult learners
- the World Wide Web
- group functioning and dynamics.

Play and Games

Not all scientists in this field accept the underlying value of play and games. Caillois (2001), for example, argues that play is an 'occasion of pure waste' and '[a] waste of time, energy, ingenuity, skill and often of money'. He furthermore argues that the phenomenon of play is unproductive by nature. Others like Linder, Roos and Victor (2001) disagree when they describe play as a fundamental and essential human activity. Amory (n.d.) states that playing games is an important part of our social and mental development. According to Rieber (1996), 'play is a powerful mediator for learning throughout a person's life'.

As these examples show, literature abounds with examples of how games contribute positively to the learning experience (Piaget 1951; Vygotsky 1978; Rieber 1996; Linder, Roos & Victor 2001; Amory n.d.).

Early literature on the role of games and play focus mainly on animals such as rodents and mammals (Thorp 1966; Smith

1984; Beckoff 1998; Tomasello 2000), and children (Callois 2001; Piaget 1951; Vygotsky 1978; Ailwood 2002). Most of the earlier references to adult play show activities in gambling houses, casinos, racetracks, and lotteries as the defined areas of adult play. In the last few years, the potential of a powerful relationship between play and information technology and learning, has been given a lot of attention. Branded as *'edutainment'*, and often sold under the banner of *'Learn as you play',* commercial games are commonly marketed as having the potential to promote learning (The KDE Edutainment Project 2004; Edutainment: How to teach English with fun and games 2004).

Much of the literature on game research centres on PC-games such as action, adventure, strategy, arcade, and simulation games. These games are computer-based in the sense that the interaction that takes place is mainly between a computer program and the individual playing the game. But current growth in this sector (some of it on a national scale in countries like South Korea) is in the area of online gaming where players compete against each other in a virtual environment in real time. Communications Today (2002) reports:

> A new study from analysts DFC Intelligence predicts that there will be 114 million subscribers to online gaming services, and that overall usage will be nearly six times greater [than] what it is today.

The potential of learning via the Internet is vast, although it is still relatively new, and under-explored. There is a need for more research into online games that can be introduced into a virtual classroom as part of formally defined educational strategy. When the literature refers to the role of games, it is usually in the context of corporate training rather than in that of higher education (Piskurich, Beckschi & Hall 1999; Thiagarajan & Jasinski 2000; Gentle n.d.). The fact that much has been written about the value of games such as icebreakers, role-playing, and brainteasers in corporate training has been acknowledged (Thiagarajan & Jasinski 2000; Redden 2003). Even so, many professionals in higher education remain sceptical of the notion that play and fun can actually *enhance* and facilitate the learning experience of students.

In contrast, there seems to be a growing trend in some educator's use of computer games for learning (Asgari & Kaufman 2004; Karaliotas 1999). Although this use of games is far from new, they have re-emerged in the last few years in a new guise. Thus transformed, they carry the potential to transform computer-based games to levels at which they could function far more creatively and usefully

than the stereotyped, mind-numbing and often violent games that are so ubiquitous on the commercial entertainment scene.

In this study, I explore the effect that a metaphor of a game such as *Survivor*© has on the interactions that take place within an adult online learning community.

Adult learners

This study will also fill a void in the existing literature because it combines the adult learner, an online learning environment, and a game that is played on the Web. There is little current research in this field that provides in-depth research into cases where all these factors are combined. Presenting the *CyberSurfiver* module, on which this study is based, provided me with data that will help to inform practice and will help those involved in such work to appreciate some hitherto obscure aspects of what ensues in such situations.

Although it is acknowledged that adult learning is a very old discipline (we only have to think of educators such as Confucius, Jesus, and Socrates), the starting point of my investigation into the literature on the topic of adult learning begins around 1950 with Harry Overstreet's *The Mature Mind*, and was followed up by Malcolm Knowles *Informal Adult Education*. Edmund Brunner's *Overview of Research in Adult Education*, and J.R. Kidd's *How Adults Learn* also contributed to a descriptive listing of concepts and principles concerning adult learners. Over the years, more comprehensive, coherent and integrated theoretical frameworks have surfaced, and adult learning, or andragogy, as it is often called, became a fundamental and differentiating concept (Gent 1996; Merriam & Caffarella 1999; Conner 2004; Reischmann 2004).

There is a need for more research into adult learners in an online environment, and more specifically in learning scenarios where a game is being played online. This is where the contribution of this study will be positioned: it will comment on adult learning in an online module that is presented in the format of a game.

World Wide Web as a learning environment

For many life-long learners, elearning has become a convenient way to realise their desire for further education. Other attributes of web-based learning include flexibility in terms of time and place, which makes it possible to study wherever one may be and whenever one has the time. But large-scale elearning presents with its own inherent problems. It challenges potential users with concerns about costs, stability, and access,

to name but a few of the challenges that retard growth in this potentially viable field.

Another challenge is the way in which the Internet is currently utilised in the education milieu. Many institutions embark on the journey of elearning by simply posting study guides and extended lecture notes on the Web. The online course statistics of such institutions are often made up by courses that merely exist as learner guides that are posted to the web in PDF format.

Some innovative teachers have advanced beyond these basics, and have started to create more creative course notes that are enhanced with multimedia and high-tech simulations, electronic tests, and interactive group discussions that use whatever communication tools are available on the web. But not much has been written about how the Internet can be used as an effective medium when an educational situation dictates that a game be played.

Group functioning, interaction and dynamics

Literature describing group development phases and processes abound (Tuckman 1965; Fisher 1970; Tubbs 1995; Johnson & Johnson 2002). For example, more than 115 developmental models that describe how a group progresses over time exist (Conyne, n.d), and most of them break group development up into a beginning, middle, and an ending phase. Each of these phases are usually characterised by predictable dynamics. Each beginning phase for example is characterised by a lack of direction, a search for security and a desire to become oriented. In the middle phase, students are usually more or less ready to engage with tasks and they do so as best they can. Toward the ending phase of the group's life span, students deal with the closure around their involvement with the tasks and with each other.

Teachers who are aware of and skilful in the use of group dynamics have always used this knowledge (albeit instinctive) to guide their instructional processes and have offered their learners powerful and unique learning experiences. Most of these studies focus on the role of group development and dynamics in the context of a face-to-face educational environment. This study proposes to focus on the group dynamics of adult learners in a virtual learning environment that is specifically based on an extended game metaphor.

This study devotes a great deal of attention to the need for a better understanding of and increased dialogue about the consequences that overtake a group that is intensively engaged in a challenging online course (Warschauer 1997). By heightening awareness and creating dialogue, I hope that this study will lead to a better

understanding of the way in which the dynamics in a group influence the online learning experience.

Purpose of the study

The purpose of the study is to investigate the role of the metaphor of a game in the interaction, dynamics and complexities of a web-based module that is presented to adult learners. I define the complexities I refer to as those things that happen within the group, and to the group, and as various other specific factors that promote or inhibit learning in this context.

The uniqueness of this study is attributable to a combination of elements. These elements focus on:

- games and play, and their motivational potential and value for adults
- adult learners, group complexities and dynamics, and the various kinds of online interactions to which group members are subjected
- the World Wide Web as a learning environment

Games

My purpose in this study is to throw light on the impact of the metaphor of a reality game such as *Survivor*© on the complexities of adult learning in a web-based module. In order to do this, I shall investigate the following elements of the game:

- Group composition and shuffling
- Isolation (on the virtual island)
- Tribal assignments
- Individual assignments
- Reward challenges
- Immunity challenges
- Tribal Councils
- Voting
- The Grand Prize

Interactions, dynamics and other complexities in the group will be investigated in terms of the following focal points:

- Learning outcomes and expectations
- Peer support
- Feedback from peers and the facilitator
- Peer assessment
- Interpersonal conflict
- Language issues
- Stress factors
- Time concerns
- Competition
- Humour
- Personal lives
- Synchronous and asynchronous communication
- Costs implications
- Online culture
- Retention rate

One important feature that distinguishes this research study from current research in the field is that it deals with a game that is played *entirely* over the Internet. It is important to note, though, that the game could also have been played in a traditional face-to-face classroom situation, or even on a real island, as happens in the television show. This study will be one of the first to explore the group complexities inherent in the process of playing a game such as *Survivor*© in cyberspace.

Adult learners

A successful facilitator of adult learning usually has a comprehensive understanding of how adults learn best. It is widely acknowledged that adults have special learning needs and requirements that are different from those of children and teenagers (Lieb 1991; Stroot *et al.* 1998).

The learners who constitute the case study sample in this research were all mature adult learners with needs that appear to be very different from those of younger and less mature learners. Part of the uniqueness of this research is that it focuses on the role of games in andragogics (adult learning) as opposed to the role of games in pedagogics (the learning of children).

This study also aims to explore the intricacies involved in playing games with adults in an online environment in contrast to how it would be in face-to-face teaching practices.

The research will furthermore examine some adult learning theories and characteristics. It also aims to look at the extent to which the various learning strategies that were utilised in the *CyberSurfiver* module influence the learning experience of the participants. In addition, the motivational and the distracting factors at work in playing this game online with adult learners will also be discussed.

A web-based course

The *CyberSurfiver* module on which this research is based was presented exclusively over the Internet – with the exception of an initial face-to-face introduction (of approximately 30 minutes' duration), an emergency 'tribal council' session at the end of the first week (of approximately 1.5 hours' duration), and a final debriefing 'tribal council' (of approximately 2.5 hours duration).

The web was thus extensively used as the medium of tuition. It was used as a communication tool, a virtual meeting place, a venue for tests and assessment, a drop-off space for assignments and completed tasks, and as a resource for information. The use of the Internet as an almost exclusive medium of contact between the facilitator and the learners

made this learning experience essentially different from the traditional face-to-face mode of teaching and learning.

The outcome of this study will therefore constitute a critical report on the potential of the World Wide Web to host a game in an adult learning environment. It will also comment on the selection of the tools and products that were used to present and facilitate the module. In addition, this study aims to address the technology and connectivity issues that arise, as well as the cost factors involved in teaching online by means of a game.

Many advocates of web-based distance education emphasize its advantages and understate the amount of work it requires from both the teacher and the learners. This section of the research will focus particularly on the extent to which the World Wide Web is able to provide a suitable educational environment for playing games with adult learners. It is the combination of the factors mentioned above that makes this research unique and that distinguishes it from other studies that have been undertaken in the past.

Problem identification and research questions

This thesis will report on the complexities of group functioning involved in teaching and learning online within the context of a game. The main research questions that will be addressed by this study are:

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?

In order to make the answers to the above-mentioned questions more explicit, the researcher formulated four sub-questions:

1. How could a web-based module on elearning be designed so that it closely resembles the game structure of the *Survivor©* reality show? (These are addressed in chapter 4.)
2. How did this module develop over time, and what were the key issues that emerged? (These 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 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 are addressed in chapter 7.)

Among the many issues and questions that will be raised in this study, those below (see Table 1) will receive particular attention.

Table 1: Research Questions and Key Constructs

Sub-Question	Key constructs
How could a web-based module on elearning be designed so that it closely resembles the game structure of the *Survivor*© reality show?	• The *CyberSurfiver* module design
How did this module develop over time, and what were the key issues that emerged?	• Critical incidents as they surfaced on a week-to-week basis
How did the reality game elements affect the various types of interaction and the group's functioning as a whole?	• Group composition and shuffling • Isolation (on the virtual island) • Tribal assignments • Individual assignments • Reward challenges • Immunity challenges • Tribal Councils • Voting • The Grand Prize
What are the complexities involved in teaching and learning by means of a module that is based on a metaphor of *Survivor*© ?	• Learning outcomes and expectations • Peer support • Feedback from peers and the facilitator • Peer assessment • Interpersonal conflict • Language issues • Stress factor • Time concerns • Competition matters • Humour • Personal lives • Synchronous and asynchronous communication • Costs implications • Online culture • Retention rate

The above-mentioned questions and constructs will provide a sharpened focus, and will serve both to limit and delimit the *CyberSurfiver* study.

Context

This section deals with the international, national, and higher education context before it aims to define the scope of the study.

International context

With the growing number of online courses, the increasing accessibility of computers, and the increasing number of computer users, teachers all over the world are taking advantage of elearning for either distance teaching purposes or to enhance traditional classroom experiences with the use of computers.

As they have progressively invested in these new trends that have enveloped higher education, institutions throughout the worlds have invested a great deal of money and resources to obtain sophisticated learning management systems (LMSs) such as WebCT, TopClass and BlackBoard. But in doing so, they have often neglected to provide adequately for the professional development of those members of their staff who need to make use of these systems (Milligan 1999). Without proper training and exposure to best practices, it is difficult for lecturers, who themselves have not been exposed to online learning, to create elearning opportunities that are fun and challenging at the same time.

It is my opinion that – more often than not – the decision to offer online (or 'blended') courses is taken by those in top management positions who are mainly responsible for administration, finance and other strategic fundamentals, but without any input from or involvement with those lecturers who will have to implement such decisions. And because many of these lecturers who implement the courses have no experience or exposure to good practice in the field of elearning, their attempts at online teaching replicate their face-to-face teaching style in another medium. Many so-called 'online courses' only consist of an online study guide, a couple of links, and possibly a drop-off box for assignments.

As distance and blended learning becomes more popular and widespread, lecturers are being compelled to develop their curricula, methods and presentation by taking learner perceptions of online learning into account. It is sadly the case that 'online' professors and lecturers only embrace available technology to the extent and in the manner in which *they* feel comfortable – while their hapless learners experience little but boredom, frustration, irritation and regret (Burnett 2001; Taynton 2000). Because the

specific concerns and areas of learner dissatisfaction are seldom addressed, learners at best often end up by being unwilling to embark on any other elearning course. Nowadays most institutions of higher learning in the United States of America offer some form of technology-enhanced education programme. The number of distance education courses is growing rapidly (Hanna 1998; National Center for Educational Statistics 1998; Rahm & Reed 1998; Roberts 1996). According to National Center for Educational Statistics in 2000-2001, 89% of public four-year institutions and 40% of private four-year institutions offered distance education courses by means of technology, and the total enrolments were (at the time of reporting) over three million in all distance education courses offered by all institutions (Chang 2002).

A few virtual universities such as the University of Phoenix Online and the Capella University in the United States of America, and The Open University in the United Kingdom, exclusively offer educational programmes via distance learning and rely almost totally on distance education tuition as their main source of income. On the other hand, most traditional universities and colleges start with face-to-face educational programmes, and gradually enhance them by adding elearning elements.

National context

South Africa's 1994 democratic elections marked a turning point for education and curriculum development in South Africa. This happened because the 1994 election heralded the birth of a new South Africa, and the acceptance of South Africa as a member of the world community for the first time in many decades. While many countries in the world are looking for better ways to educate their people and administer their education and training systems, South Africa is specifically challenged to gain an edge in an increasingly competitive economic global environment. Because the world changes ever more rapidly politically, geographically and technologically, the success and survival of South Africa requires that we design and implement a national education system that provides high quality learning and that is open and responsive to the ever-changing conditions of the world environment. After decades of repression, it is also appropriate that South Africa be committed to nation-wide programmes of life-long learning.

The technological advances of the twentieth century have placed education systems under immense pressure as they try to adapt and incorporate these changes into efforts to produce more creative, effective, and adaptable people. With this context in mind, South Africa has set up a National

Qualifications Framework (NQF) and created a new education system that is firmly based on outcomes based education (OBE). In such a system, learners can discern the ways by means of which they might access both education and training. This motivates them to improve their skills and knowledge, and thus to improve their employment opportunities.

Curriculum 2005 was introduced in 1997 with outcomes based education as a major focus. OBE provides a system that permits all learners to realise their abilities, and it equips learners for lifelong learning in a democratic society.

Soon after the first implementation of Curriculum 2005, it became clear that problems would arise. To meet these challenges, the then Minister of Education, Kader Asmal, set up a committee in 2000 to review the curriculum. This resulted in a reworking of the curriculum, and the birth of the streamlined Revised National Curriculum Statements (RNCS) that were released in May 2002. Even though the RNCS is more efficient and streamlined than Curriculum 2005, many teachers are still apprehensive about what it requires from them, and ill-prepared for the transitions they will have to make. According to the present Minister of Education, Naledi Pandor (2000), the latest plan is to introduce the new school curriculum into grades 10-12 from 2006 so that school leavers in 2008 will be the first to write the Further Education And Training Certificate instead of sitting to obtain the present matriculation certificate. The process of change has thus been mapped out over the next four years to ensure a gradual implementation and acceptance of this new curriculum.

South Africa has identified a number of broad outcomes that describe the kind of skills and understandings that all citizens should develop through the new education system. These require the learner to be able to:

- communicate effectively by using visual, mathematical and language skills
- identify and solve problems by using creative and critical thinking
- organise and manage activities responsibly and effectively
- work effectively with others in a team, group, organisation and community
- collect, analyse, organise and critically evaluate information
- use science and technology effectively and critically by demonstrating responsibility towards the environment and concern for the health of others
- understand that the world is a set of related systems

These critical outcomes are important for this research because the *CyberSurfiver* study,

on which this research is based, aimed to achieve all of them.

In 2003, the government drew up a draft White Paper on e-Education (*eEducation Draft White Paper* 2003). In this document they respond to the new information and communication technology environment in Education. In this text, the then Minister of Education, Kader Asmal (2003), expressed the view that digital media has

> revolutionised the information society and advances in ICTs have dramatically changed the learning and teaching process. This has opened up new learning opportunities and provided access to educational resources well beyond those traditionally available.

What is disturbing though is the fact that the entire White Paper focuses on teaching and learning in the secondary school system and there is no mention of the government's intention to address the elearning issues in higher education. In spite of this, it is reassuring to know that the government is taking cognisance of global trends and that they understand the impact that technology can have on teaching and learning processes.

Education Minister, Naledi Pandor, stated that the Department of Education foresees that that, by 2013, every South African manager, teacher, and pupil will be ICT capable (Nthite 2004). The goal is that they should be able to use ICT confidently and creatively to develop the skills and knowledge that they need to achieve their personal goals and to be full participants in the community.

Local higher education context

In South African higher education, very little research has been done into the role of games in an online learning environment. While the University of Natal has been quite active in the field of game research over the past few years, their focus seems to be on designing elaborate computer-based PC games and simulations (Amory 1999).

The University of Pretoria (UP), with their Master's Programme in Computer-based Education, is arguably the most advanced and globally competitive programme in the field of eLearning in South Africa. Ever since its inception in 1992, the facilitators of the various modules have all, in their own ways, extended the limited possibilities inherent in traditional teaching methods. Consistent evidence of high standards, innovation, and creativity have made this course over the years a highly popular master's programme with both students and employers alike.

The positive dynamics created by UP's innovative approach motivate students to work hard and to make this course a fulfilling

– if exceptionally tough – learning experience. As one of the students mentioned in a posting to an electronic mailing list recently (CATTS 25 June 2004):

> *No..., it was tough sometimes, but I've never regretted those years. And I am still firmly convinced that the programme at Tuks* [University of Pretoria] *is the best in the country*. [My parentheses]

Scope

While the area of human play research has been neglected for many decades (Smith 1986), a large number of disciplines have converged on the topic of play during the past twenty years or so. Among such prominent disciplines are socio-biology, psychology, sports sociology, psychoanalysis, and anthropology. Play research in the area of animal behaviour has also received a considerable amount of attention, especially in the field of ethology (Thorp 1966; Fagin 1981; Smith 1984; Beckoff 1998; Byers 1998; Tomasello 2000).

Even though a variety of studies on play have been pursued with great vigour during the past few decades, these focused mostly on play in infants and in preschool and older children (Piaget 1951; Vygotsky 1978; Krasnor 1980; Pepler 1980; Smith 1984; Sutton-Smith 2001). Play is found in all cultures and in a variety of guises such as rituals, story telling, music, games, sport, and art. But now play is becoming an increasingly specialized activity and the complexity and richness of games generate new forms of play with each generation.

The past two decades have been notable for the rapid growth of computers and computer technologies (Tzeng 2001). This development has given a huge boost to the market for computer-based games. Typically, it has taken a while for some people to register the considerable impact that computer games have made in academia. Now more and more scholars from a variety of disciplines are paying close attention to (among other things) the various design principles, the sociological implications, and the cognitive, linguistic and anthropological issues that are implicit in computer-based games (Rieber 1996).

On the international scene, scholars are researching the role of games in an online environment from a variety of angles. Lloyd Rieber's work on the use of computer-based games in an educational setting constitutes groundbreaking research that can be used as a fundamental text to stimulate many other studies in the field. In the past two decades, research in educational games has largely been guided by Malone and Lepper's (1987) Theory of Motivation. In the Flow Theory of Csikszentmihalyi (1990), Eccles's Model of Achievement and Activity

(1983), and the ARCS Model by Keller (1979), we see international experts all of whom deal with the theoretical foundations of motivation that impact on the value and role of games in an elearning context.

The *CyberSurfiver* study under scrutiny is part of the above-mentioned Master's Degree in Computer-Integrated Education, offered by the University of Pretoria. Even though the learning experience in this study is firmly based on the use of personal computers that are connected to the Internet (i.e. the learning takes place mostly 'online'), this study is unique because it does not provide learning experiences through the mediation of educational gaming software such as (for example) a computer simulation of a computerised board game. In fact, the game that was played online needed only the standard web-based applications that offered popular services and tools such as those that are needed for communication purposes (e-Mail, Bulletin Boards, Polling stations, etc). The essence of the *Survivor©* game is such that it is not bound by technology, but can be played in any number of scenarios, using any number of mediums, including reality and television. The web is used in this case study as a medium for communication and a means for transferring information.

This study will only focus on the interactions and dynamics in the group that took this particular module in 2002. The table below indicates those elements that will and those that will not be included in this study.

Table 2: Inclusions and exclusions

Which elements will be included in this study?	**Which elements will *not* be included in this study?**
Adult play theories	Child and animal play theories
Andrologics	Pedagogics
The *Survivor©* game played in an online environment	Face-to-face games, corporate training games, video and arcade games, PC games and simulations, games on handheld and mobile devices, games delivered through digital television or other forms of interactive technologies
Single case study	Multiple case studies

Research design

This study is informed by an approach that is both qualitative and interpretivist. It was chosen because it gave me a huge amount of rich data for analysis. By crystallising and triangulating the qualitative results obtained from the survey, with material mined from the e-mail messages and other sources, I constructed a powerful tool with which to investigate the interactions that occurred in *CyberSurfiver*. My focus was thus primarily qualitative because the study as it was conceptualised required for a detailed, in-depth interpretation of the case. The main goal of this study was to demonstrate how *CyberSurfiver* could provide learners with opportunities to interact among themselves, with myself as facilitator – and with the content, the technology, and their various environments.

The goal of interpretivism is to understand phenomena through the meanings that people assign to them. Interpretivism is therefore largely qualitative in essence. It focuses on the complexities of how human beings make sense of phenomena. The interpretivist paradigm requires a researcher to describe meanings, to understand (as far as possible) learners' viewpoints and opinions, and at the same time to examine how objective realities are produced. Chapter 3 will provide more detail about the interpretivist nature of this study. In the *CyberSurfiver* study, both descriptive and explanatory interpretivist research were utilised. The aim of the inquiry was to try to understand what happens when adult learners are taught online by means of a metaphor of a game.

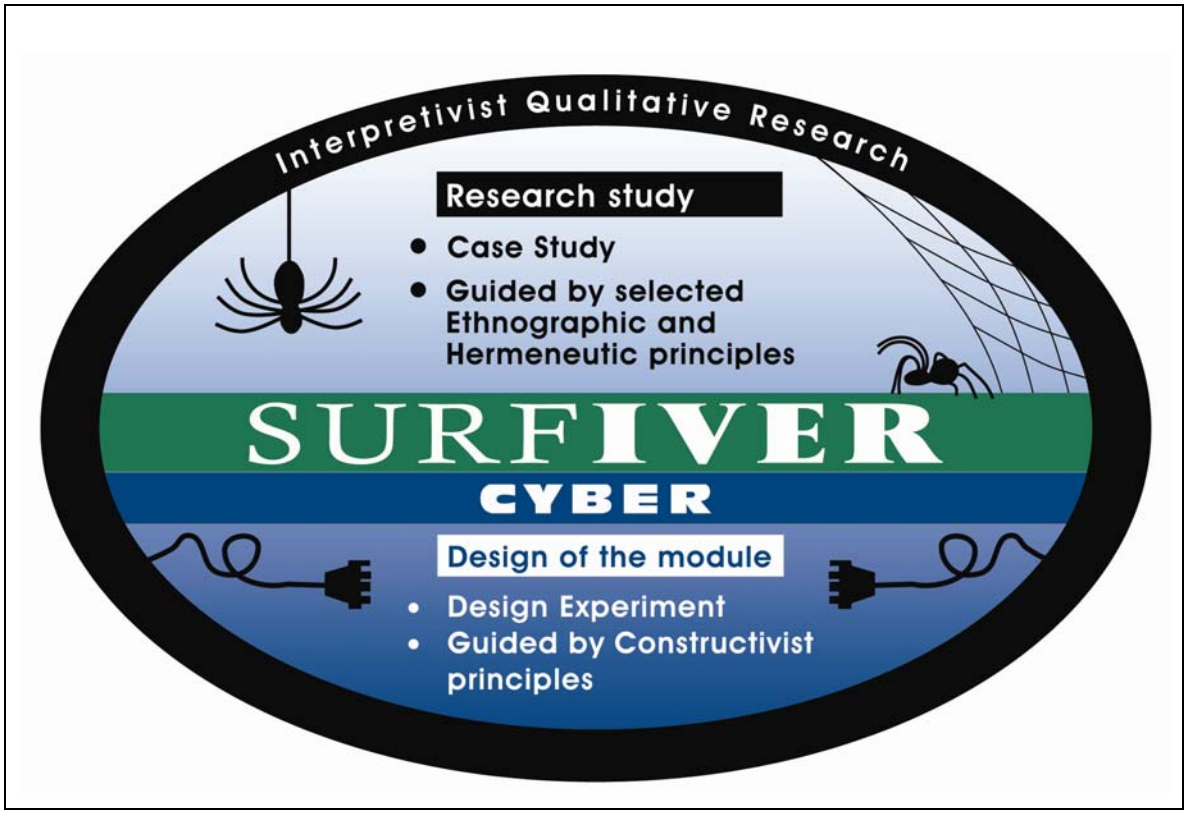
This study can be divided into two sections, namely the design of the *CyberSurfiver* module, and the actual research study that concentrated on the interactions that took place in the adult online learning environment as a result of the *CyberSurfiver* game. Figure 1 below shows the two sections graphically.

CyberSurfiver's experimental design was strongly guided by constructivist principles that encourage active and self-directed learning. Design experiments are formative research that test and refine educational designs based on theoretical principles derived from previous research (Brown 1992). This type of research design is appropriate to address the complexities of an online learning community.

Such a research design does not focus on the refinements of practice alone. It also addresses theoretical questions and issues. In design experiments, a teaching intervention should always embody theoretical claims about education, and should aim to understand how theory, the learning intervention design, and practice are interrelated.

In *CyberSurfiver*, the formative nature of this type of design was particularly scrutinised. It provided me, the researcher, with an alternative model for conducting research because it made allowance for the complex nature of learning in the online environment. The well-known ADDIE instructional design model was used in the *CyberSurfiver* study. This model consists of five phases, namely the analysis, design, development, implementation, and evaluation phases. Chapter 3 deals with each of these phases in detail.

Figure 1: Research Design



It is important to note that the aim of the design experiment was to provide the learning intervention by means of which the research study could be conducted. My aim was to interpret the interactions in an online learning environment where learning is facilitated by means of the metaphor of a game. The *CyberSurfiver* module became a case study that provided rich and multi-faceted incidents and materials for investigation and analysis.

Case studies can either be seen as a unit of analysis or as a research method. In the *CyberSurfiver* study, the elearning module was selected as the case to study because it

provided a rich source of material that could, by means of and in depth analysis, provide insight into the role of games in an adult online learning community. *CyberSurfiver* provided a case with clear boundaries and identifiable contextual material that I could use as the setting for the case. As a research method, case studies employ a number of methods including observation and surveys.

The case study also tapped into the design of ethnography. Ethnography aims to understand the behaviour, values, and meanings of a person, or a group of people. As the culture of an adult online learning community is complex and multi-faceted, an ethnographic approach is most appropriate and useful for exploring layered depths of cultural and personal meaning. In *CyberSurfiver*, the research team were subjected to a direct and prolonged engagement with the learners and could therefore observe the interactions and dynamics at first hand. The aims, methods, and possibilities of ethnography contributed to a better understanding of the complexities involved in teaching and learning online by means of a game metaphor.

In *CyberSurfiver*, multiple sources of information were gathered and collated to provide an extended collection of material that could be thoroughly investigated and explored in order to come to a better understanding of the dynamics involved in teaching by means of a metaphor in the online environment. More than ten data sources were examined in this study, ranging from survey responses to bulletin board messages.

Hermeneutics can be defined as the theory and practice of interpretation. The meaning of the textual data gathered in this study is discussed by means of this analytical data technique. *CyberSurfiver* utilised this qualitative mode of analysis and used hermeneutical methods to investigate the effect of the *Survivor©* metaphor in the adult online learning environment. I also used crystallisation and triangulation to clarify meanings and verify (as far as possible) my interpretations.

The *CyberSurfiver* data is assessed in terms of both authenticity criteria, and trustworthiness criteria such as credibility, transferability, dependability, and confirmability. Since qualitative research may be undermined if it is excessively subjective and biased, it was particularly important that the *CyberSurfiver* study be assessed by means of these criteria. As far is *external* validity is concerned, I shall not generalize my findings because my research was based on this single case study. The significance of this study resides in the rich descriptions of the details that emerge from the case study. I relate the story both from my own point of view (mainly as the facilitator), as well as from the learner's point

of view, while at the same time providing the descriptive detail that sets the quantitative results into a comprehensible human context.

Roles

As a qualitative investigator, I have used metaphors and spoken largely from a first-person point of view ('I') throughout the thesis, except in those places where I needed to distinguish between the various roles that I played in the research process. It is important to note that the role of the researcher in this study is three-fold. Firstly, I fulfil the role of course designer and developer. This implies that I was subjectively involved because my strong beliefs and convictions about what constitutes effective teaching most certainly influenced the design, development, and even the eventual implementation of the module.

Secondly, I also acted as the game master and facilitator of the *CyberSurfiver* learning experience. In those positions I enjoyed a very intimate relationship with the research subjects that allowed me to get 'closer' to them than would have been possible had I only been an observer of the process. I realise that these inbuilt features of the experimental design might open me to charges of excessive subjectivity and bias. I can only respond that I have tried to minimise the effects of disabling subjectivity and personal bias by means of rigorously applying techniques such as triangulation, member checking, peer debriefing, and a thorough case analysis. These techniques have created the basis for a credible study.

Thirdly, I have also taken on the role of the researcher. In this capacity, I worked as part of a research team that comprised two collaborators, Dr Debbie Adendorff and Ms Salome Meyer, and myself. Each one of us exerted different emphases, and we investigated the case study from our diverse points of view. Whereas I focused mainly on the interactions that resulted from the game, the other researchers explored the role of the online facilitator (Dr Adendorff) and the affective behaviour of the students (Ms Meyer), respectively. The close partnership between my promoters, Professor Johannes Cronjé and Professor Irma Eloff, my research collaborators, and myself helped me to guard against finding only that which I wanted to find. The *CyberSurfiver* learners also played an active role in the research process. The table on the next page indicates our various roles. It is important to define them because they are a significant factor in the triangulation of data that is mined from this case study.

Table 3: The roles of the various research partners

Researchers	Role	Responsibilities
Linda van Ryneveld	Facilitator	To design, develop, and facilitate the online module
	Researcher	To study the complexities of group functioning, interaction and dynamics involved in teaching and learning online in a course that is based on the metaphor of a game
Debbie Adendorff	Researcher and observer	To study and analyse the role of the online facilitator
Salome Meyer	Researcher and observer	To study the affective considerations in the design of online learning for adults
Learners	Learners in the *CyberSurfiver* module on elearning and co-investigators	To provide e-mails and other asynchronous messages, sound files and academic articles (among other resources) for data purposes To research various topics in terms of our online module for assessment purposes

Limitations of the study

All research findings contain inherent limitations, particularly studies conducted in real-life conditions such as an online classroom in which the researcher cannot easily control all the variables. The interaction and influences of a number of elements such as, for example, the selection of the case, the researcher's biases, and the interpretive method, inevitably limit the reach and understanding of this study. But such factors are accepted components of qualitative research methodology.

The MEd (Computer-Integrated Education) degree at the University of Pretoria is well known for exemplary innovative programmes and leadership in online instruction. But simply choosing the best practice model by means of a careful selection process based on predetermined criteria is not always the best option. In the event, the case was not chosen for this research because it conformed to various predetermined criteria but rather because it focused on online adult learning that was facilitated by means of a game in a way that brought together all the key components of this study. Because it did

this, the case provided the researcher with an ideal opportunity to enunciate the complexity of the dynamics involved in such a unique learning environment.

My being so closely involved in the module as designer, facilitator and researcher, could however be regarded as a limitation. My subjective involvement in so many of the phases in the process of teaching and learning might be considered to have skewed my judgement. Ihde (1977) states that looking and observation precede judgement, and that judgement and other conclusions must be postponed until adequate confirmation has been gathered. Suspending judgement until the analysis phase had been completed therefore allowed me truly to understand the dynamics involved in the module.

The selection of a largely qualitative design for this study portrays the predisposition that the data must be interpreted by the researcher through inductive and intuitive processes (Bogdan & Taylor, 1975). According to Douglass and Moustakas (1984), the researcher has to acknowledge biases and other preconceived notions of what will be found before the research process starts. Scheff (1997) maintains that qualitative studies

> may come closer to human reality, or plausibly appear to do so, but only as filtered through the observer's fallible memory, sensitivities and biases.

The impetus behind my design of the module was provided by my passionate and long-held belief that learners are able to construct their *own* knowledge if they are given an environment that encourages them to be active participants in the learning process. I consider *collaboration* and *exploration* to be other essential components in this process. With a vast amount of information available on the Internet, learners need to develop skills that will enable them to differentiate between contradictory sets of information. They also need simply to realise what a massive resource the net is. I therefore believe that learners should be given the opportunity to explore this environment and to engage in their own processes of meaning-construction. I believe that good learning environments require learners to engage in their learning processes through authentic and experiential activities.

Erickson (1986) also noted that ethnography

> should be considered to be a deliberate inquiry process guided by a point of view, rather than a reporting process guided by a standard technique or set of techniques, or a totally intuitive process that does not involve reflection.

Since 1994, I have been exploring the Internet. It did not take me long to become deeply aware of the potential of the web for educational purposes. I presented my first online course in 1997, and even though access to the Internet was extremely slow and unreliable at the time, I was captivated (even then) by its capabilities and potential and became even more enthusiastic. Although not all my online teaching experiences have been equally gratifying and productive, mainly because of technical and bandwidth challenges, with each new experience of this kind my belief in the inherent value (and potential) of online learning has escalated with each passing year.

I regularly use e-mail to correspond with and exchange documents with colleagues and friends. I shop and bank online, and I keep in touch with numerous friends and the occasional family member by means of synchronous and asynchronous communication tools. In addition, I have participated in a very successful online collaborative research project that involved participants from all over the globe, and investigated a number of web-based communication tools. Apart from obtaining a master's degree on the topic of cost-effective web-based learning environments, a number of workshops, talks and conference papers on the topic have arisen out of this involvement (Van Ryneveld 2001a; 2001b). Since I am a self-identified Internet enthusiast, I cannot deny that my enthusiasm for this medium affected both my approach to the design and my facilitation of the module.

Although my bias was inherently constructive and helpful, these attitudes did not blind me to the fact that computers and (to an even greater degree) networked computers can be maddeningly frustrating and counterproductive under certain circumstances. Hammersley and Gomm (1997) argue that a researcher must approach all research tasks with a clear knowledge of the biases inherent in his or her own experience, values, and beliefs. They write:

> Accusations of bias are a recurrent event in the social and psychological sciences.

Some of the limitations of the design included the lack of technical support, and the fact that no pro-active backup plan was in place to empower the weaker learners to complete the module successfully. With the discrepancy between the traditional experiences and expectations of some of the learners, and my innovative and constructivist approach to teaching, the potential for conflict was unnecessarily high. I believe that it is the duty of a facilitator to encourage and support learners as they strive towards becoming self-disciplined and self-directed learners who are capable of

critical reasoning. Future designs of this nature should obviate these limitations. There were also other design limitations, but they will be addressed in more detail in chapters 4 to 7.

Yin (1989) maintains that case studies are often criticised for being pseudo-scientific and too subjective. He states that the 'case study has long been stereotyped as the weak sibling among social science methods'.

Erickson (1986) states that

> the object of interpretive research is action. [...] Because actions are grounded in choices of meaning interpretation, they are always open to reinterpretation and change.

This study, like all naturalistic and bounded studies, may not provide comprehensive conclusions if considered in isolation. But if it is considered together with future studies along these lines, it should be able to broaden our appreciation of online learning communication – with particular reference to the role of games in adult online learning environments.

Ethical considerations

Whenever human beings are the focus of investigation, ethical implications come into play (Leedy & Ormrod 2001). Spradley (1990) advises that careful attention should be given to ethical considerations. All ethical research is obliged to protect the people who take part in a study so that they might be appraised of any possible risks to themselves. Participants' identities should also be protected, and any contracts or agreements about the nature and conduct of the study should be upheld. This is necessary for both quantitative and qualitative research.

In order to comply with the requirements of ethical conduct, the *CyberSurfiver* study was carefully reviewed in terms of the following elements: *informed consent*, *voluntary participation*, and *anonymity*.

Informed consent was ensured because learners were informed of the nature of the module and the research projects related to it in the first introductory contact session. Learners were furthermore introduced to the researchers involved and were requested to voice any objections to the programme format or the research studies. The nature of the *Survivor*© game, on which the presentation of the module was based, is such that the other tribe members vote participants off their tribes during the course of the game. Learners were warned that this might be experienced as emotionally stressful. Learners were therefore informed that participation was strictly voluntary. At this session, verbal permission for the research studies was granted, and all the

learners indicated that they would like to participate in the studies. Learners were also requested to complete a written consent form after the module had been completed. This all of them did.

In the final stages of the research, I followed this up with an e-mail to all the participants that reminded them of the research, and once again brought to their attention the fact that they had given their permission for me to use quotes from their e-mails, bulletin board discussions, and the other data sources. At that stage I also confirmed that all their remarks (words) would be concealed under pseudonyms that would protect their anonymity. As it had been two years since the module was presented, I was not sure whether all the addresses would still be valid. In the event, nine of the participants responded – all favourably. In fact, the learners who responded were also those whose comments and contributions I had most regularly quoted. Most of them indicated that they might even have been willing for me to use their real names, as it seemed as though they felt they had nothing to hide. In this study, however, I only used pseudonyms.

Quantitative research typically calls for the administration of a questionnaire, which does not necessarily ensure an in-depth contact between the researcher and the participants in the study. But in qualitative research, such as the *CyberSurfiver* study, the researcher has ample contact with the learners, and gets to know most of them rather well on a personal level. By getting to know them, gaining their trust, and even by forming long-term collegial relationships with them, I was always painfully aware that I was walking in a field that was fairly dense embedded with ethical land mines.

However, one of the strengths of qualitative research today, and one of its greatest challenges, is the attempt to rethink the relationships that researchers build with the participants in their studies. There seems to be a need for non-exploitive relationships and for cooperation and collaboration. This particular research study actually invited the learners to become partners in the inquiry process by, for example, designing learning activities that encouraged them to explore a variety of concepts related to elearning, that had to culminate in research articles. In these articles, learners conducted their own mini-research projects, some of which became rather substantial, so much so that at least two of these articles have been submitted, while at least one has been accepted for publication in recognised scientific journals (Sherry *et al.* 2004).

Educational researchers are accountable for the way in which they conduct research. All studies should be exposed to criticism and scrutiny so that the researcher will have opportunities to evaluate and measure standards of conduct (Spradley 1990). With

hindsight, I realise that the module could have been designed to generate lower stress levels, and that more technical support could have been provided.

Terminology

Because words and expressions often have more than one meaning, I would like to clarify the way in which a number of concepts are applied in this study. Many other words and expressions are defined elsewhere in this thesis and these definitions will not be repeated here.

Frasca (1999) proposes the term *ludology* to refer to the (as yet non-existent) discipline that studies game and play activities. A more common understanding of the term ludology refers to the study of video games. As later discussions will show, this study is not about electronic or online games. In this study, the *CyberSurfiver* game refer to the online module that was presented in the metaphor of the *Survivor*© reality show. When I use the word 'metaphor', I refer to a figure of speech that highlights similar qualities or attributes in two different things by saying that the one *is* the other.

In this thesis I often refer to the fact that the subject of the *CyberSurfiver* module is *elearning*. For the purposes of this study, elearning refers to the delivery of a learning programme by electronic means. In this study, though, the focus was predominantly on the Internet, even though it is acknowledged that elearning can utilise a much greater variety of equipment than personal computers connected to the Internet. When I use *online education* or *online learning* in this study, it always refers to learning activities on the Internet. I furthermore support Boettcher's (1995) definition that states that online learning is

> an educational philosophy for designing interactive, responsive, and valid information and learning opportunities to be delivered to learners at a time, place and in appropriate form convenient to the learners.

I have a coffee mug that boldly states that St Augustine defined teaching as something that causes students to learn. I must say that I disagree because I see learning mainly as an activity that is *self-directed*, and only marginally influenced by the teaching activities of an instructor. In this study I often refer to *teachers* when I could have used *instructors*, *facilitators*, *faculty*, or *lecturers*. By *teacher* I mean any person who offers ideas and facilitates knowledge construction, sets standards, encourages creativity, supports and assists learners in their learning process, encourages learners to reach their full potential, and assesses learning outcomes – to name but the most obvious teaching activities.

Even though I acknowledge the differences between andragogy and pedagogy as they are is explained in a later section of this thesis, I also in general refer to *pedagogy* as the art, practice, profession, or science of teaching without necessarily excluding adult learning from the definition.

Outline of chapters

Chapters 2 to 8 will cover the following ground:

- Chapter 2 offers a review of literature relevant to the research questions and the various sub-questions. It will focus on the use of educational games, group dynamics in small groups, the characteristics of adult learners, group formation, and the various types of interactions that can be expected in an adult online learning environment.

- Chapter 3 comprises a description of the paradigm in which the study was conducted, and discusses the case study as a research strategy. It will also focus on the trustworthiness, authenticity, and transferability of this study. This chapter then continues with a description of the data collection methods and the process of data analysis.

- The researcher will describe the details of the case study on which this research is based in Chapter 4.

- Chapter 5 will focus on the impact of a reality game such as *Surfiver* on the dynamics of adult learners in a web-based module. The reader will be taken on a journey through the six weeks under discussion.

- Chapter 6 will explore the different types of interaction and the resulting group complexities that were the outcome of the introduction of the Surfiver game elements. These include the group constitution, the elements of isolation (on virtual island), the tribal and individual assignments, the reward and immunity challenges, the shuffling of the groups, the practice of voting, the tribal councils, the jury, and The Grand Prize.

- Chapter 7 will then continue the discussion of the different types of interaction and the resulting dynamics in the group as it related to the peer support, language aspects, stress factors, conflict aspects, feelings of inadequacy, time issues, competition issues, roles in the group, availability and access, collaboration, language, humour, feedback, personal lives, and levels of commitment.

- In Chapter 8, the researcher will conclude with a summary of the research questions and results, the problem statement and rationale, the literature review and the design. It will also include a section on the methodological, substantive and scientific reflection. Lastly, the chapter will close with some recommendations for policy and practice, and for further research and development work.

Introduction

If educational practitioners wish to ensure that education will be intrinsically engaging and satisfying, they need to think carefully about the learning process. Why do adults engage in learning? Are there enough motivators to ensure that people will want to learn in depth? How can opportunities for interaction be designed so that they support learning goals?

This study examines the interaction that took place in an adult online learning community as a result of the introduction of a metaphor of a well-known television reality game. It investigates the dynamics between the learners who were involved in the module, and explores the group dynamics that arose out of the application of the *Survivor*© metaphor as a means to teach this module.

This chapter will review the literature that deals with play theory and other play and game-related issues, and will touch on adults' expectations of the learning environment and the role that motivation plays in the learning process. We will then look in more detail at some aspects of group formation. Finally, the chapter will conclude by providing the conceptual framework that grounded the study, through both the design and research phases. This section will focus on the role of the various types of interaction that underlies the dynamics of this online course.

The element of *play* in learning

Until quite recently, most educators defined learning exclusively as something that happens within a defined space and time, and that depends decisively on printed or written materials and the delivery of a lecture or oral teaching presentation by one person to a largely passive and often indifferent audience. In the last decade or so, the proliferation and development of the technology that characterises the 'information era' has undermined the largely unchallenged authority and prestige of traditional definitions of teaching and learning that have prevailed for so many centuries. Today, the availability at ever-more reasonable prices of a variety of electronic media have potentially liberated teaching and learning from the constraints of space and synchronicity and have stimulated among practitioners a new drive to adapt teaching practices to the potential of these new virtual learning environments. In spite of these developments, very little attention overall has been given to the impact of *creativity* and *enjoyment* on the learning process – two factors that may indeed generate intrinsic motivation in those in whom it was either weak or altogether absent (Karaliotas 1999). While intrinsic motivation will keep some learners working on specific tasks (no matter how dreary and poorly presented), many do not possess the natural curiosity, drive, vision, or interest that

one needs to succeed in a traditional learning environment.

Over the past two decades, electronic games have become an ubiquitous part of the suburban scene in many affluent societies, especially among younger people. While the obsession of the young with these games initially alarmed both parents and educators alike, some far-sighted educational researchers soon began to wonder whether this intense motivation to play could be tapped and harnessed for educational purposes (Malone 1981).

Whilst some educationists such as Moore (n.d.) argue that fun, games and humour can sugar-coat learning and make regular instruction seem dull, others like Garris *et al.* (2002) reason that games and play can help to focus a student's attention on content and can intensify a student's positive affects. Lepper and Malone (1987) also discuss the effects of adding game features to educational situations from the points of view of two perspectives. They argue that from one perspective the addition of games may be distracting and therefore decrease learning. While they agree that adding game elements may increase learner motivation in the short term, they argue that game elements may, in the longer term, cause learners to experience other more traditional ways of learning as boring – thereby decreasing interest in such forms of learning. Cordova (1993) also notes that the opponents of using computer games in education indicate that such activities may distract learners from educational content and thus vitiate the learning process.

The other perspective emphasises that motivational game-like features may increase learners' attention and ultimately enhance learning (Malone & Lepper 1987). Garris *et al.* (2002) support this viewpoint and report that incorporating game features in the learning process increased motivation and consequently enhanced attention and retention. Cordova (1993) states that the introduction of games enhances learning because it increases learner's enjoyment, attention, effort, and concentration. Chen *et al.* (1998) also report on the positive effects of computer-based educational games on motivation and learning.

Lifelong learning is an ideal to which progressive governments have committed themselves in their educational policies and planning (MEXT 1990; Paye 1995; eEducation Draft White Paper 2003). In spite of this, learning opportunities that include elements such as problem solving, critical thinking, and creativity are few in number. To make lifelong learning a viable option, the presentation of learning should be characterised by certain invariable features, one of which is that learning should (wherever possible) be made a *pleasurable* activity (Kinzie 1990).

The play attribute

In societies in which a strong work ethic prevails, the worth of individuals is usually predicated on the activity they engage in to produce an income. In such societies people feel worthless if they are not constantly busy with something that is seen as 'productive' in this narrow sense. In terms of the kind of Puritan theology that is still widely influential (if only implicitly) even today in the affluent Western counties of the world, work is *blessed* because by keeping people busy, it draws their attention away from *evil thoughts or pursuits* such as *worldly joys* and *pleasures* that may be *sinful* (Karaliotas 1999).

These ingrained modes of thinking have effected a separation between work and play, with fun or enjoyment, representing purposelessness, characterised as something that should only be indulged in at specific times, in measured ways, and on special occasions. Fun and playfulness are often ruthlessly repressed in working environments, as may be seen in those computer games that enable the user to hide the game from the boss. This essentially artificial separation between work and play has had a profound effect on traditional learning theories and educational design. Play and games are often assigned a role that is secondary to 'real' work. Some educational theories and practices indeed assert that learning *is* essentially a non-playful process because learners have to accept that gaining knowledge can only be the result of hard work (i.e. suffering, boredom and alienation). This widespread but implicit belief severely limits the possibility of research into the phenomenon of play as a means of making learning more effective and less arduous in every way.

Play is both natural and instinctive (Huizenga 1929). In the literature, the heritage on play is often traced back to William James's (1890) textbook classic, *The Principles of Psychology*. James (1983) considered play to be a human instinct:

> Instinct is usually defined as the faculty of acting, to produce certain ends, without foresight of the ends, and without previous education in the performance... [Instincts] are the functional correlatives of structure.

Play is a natural phenomenon in humans. Kerr and Apter (1991) confirm this:

> Play is not a special and unusual psychology phenomena. It is, in healthy people, ... normal, regular and frequently occurring.

Huizenga (1929) states:

> Nature, so our reasoning mind tells us, could just as easily have given her children all those useful functions

> of discharging superabundant energy, of relaxing after exertion, of training for the demands of life, of compensating for unfulfilled longings, etc., in the form of purely mechanical exercises and reactions. But no, she gave us play, with its tension, its mirth and its fun ... the fun of playing resists all analysis, all logical interpretation ... Here we have to do with an absolutely primary category of life, familiar to everybody at a glance right down to the animal level ... Animals play, so they must be more than merely mechanical things. We play and know that we play, so we must be more than merely rational beings, for play is irrational.

Play is a basic part of the behaviour of most mammals, including people. Although play is easy to recognize, it is difficult to define. It covers a heterogeneous assortment of activities from the sudden pounce and attack efforts of a kitten, to the highly ritualised games of adult human beings.

According to Huizinga (1950), a cultural historian and influential modern play theorist, play can be defined as: free, outside of ordinary life, not serious, of no material interest, not for profit, and absorbing. He depicts play as a voluntary activity indulged for its own sake, and although it may be creative, he regards it as being unproductive and non-utilitarian. Huizinga describes play as having boundaries of space and time because while it lasts it takes place outside those events that most people would call *ordinary* or *normal life*. Play operates according to its own course and meaning and is regulated by arbitrary and conditional rules and conventions which are integral to the uncertainty of play.

Huizinga titled his book about play *Homo Ludens: A Study of the Play Element in Culture*. The term *Homo Ludens* means *Man the Player*, which contrasts with the descriptor that palaeontologists have assigned human beings: *Homo Sapiens*, or *Man, the Thinker*. Huizinga's ascription emphasises the priority that he has assigned to the element of play in society.

Huizinga also believed that play (or *agon*, competition) has the power to push a person beyond mediocrity. As people compete for first place, they simultaneously force themselves to improve their skills and so they reach beyond themselves and achieve a degree of educational success that is beyond their self-assigned mediocrity.

From contests such as those that were a prominent part of everyday life in ancient Greece, we have imbibed values and attitudes that even today form the bedrock of civilised living. These values are implicit in the *CyberSurfiver* design. They include:

- playing by the rules
- respecting the rights of others
- appreciating the results of team or individual effort.

According to the social scientist, Caillois (1986), play is an activity that is separate, uncertain, unproductive, fictitious, and organised. He also called it an occasion of pure waste: waste of time, energy, ingenuity, skill, and often of money. He defines play as a free and voluntary activity that occurs in a special space protected from the rest of life, and as being an activity that has no certain outcomes. While the *CyberSurfiver* game was uncertain in its outcome (it was not known, for example, who the sole *CyberSurfiver* would eventually be), the module was certainly not unproductive nor did the learners experience it as 'fictitious'. One of the learners in the module commented that she experienced *CyberSurfiver* as anything but a game because of the pressure of hard work and challenges such as limited time and the problems associated with the technology.

Caillois (1986) furthermore groups play into various categories, from the *unstructured* to the *highly disciplined*, and distinguishes four main types of games. According to Caillois (1986), these types include games

- in which competition (*agon*) or conflict dominates (as, for example, in matches and racing games)
- where chance (*alea*) or luck is dominant, such as in *Snakes and Ladders*
- of simulation and mimicry, such as we see, for instance, in children's make-believe play
- in which dizziness or vertigo (*ilinx*) are stimulated – such as when we ride on roller coasters or whirl around for a long time

CyberSurfiver would probably be categorised as a *simulation* because the *CyberSurfiver* metaphor involved some role playing.

Krasnor and Pepler (1980) contend that play is flexible, that is has a positive affect, that it is intrinsically motivating and is not literal, whereas Bejarano (1998) described play as a

> space of uncertainty, difficulty and of challenge and creativity, that invites participation in the collective construction of alternatives. Those who enter play find a world of autonomy, decision and risk. To survive in play it is necessary to make use of our life experience and knowledge, and resort to instinct and perspicacity and the moment of inquiry and the search.

Numerous other sources aim to define the meaning of play and list the various

characteristics that are associated with play. The table below is simply an indication of the various characteristics attributed to play in the literature.

Table 4: Characteristics of play

Characteristics of play	Author(s)
• intensive • purposeful • goal oriented • optimal life experience • satisfying • rewarding • clear goals	Rieber & Matzko (2001)
• the game itself has intrinsic worth • learners are in control • the game stimulates a sense of competence • learners work under the impetus of 'optimal challenge' • an activity in and of itself that is enjoyable	Perkins (1986)
• inherently unproductive	Garvey (1990)
• lacks extrinsic goals • intrinsically rewarding • fantasy and imagination superimpose on reality	Diamond (1996)
• it carries an emotional element of pleasure • it is characteristic of the immature rather than of the adult • it differs from non-playful responses in having no immediate biological result	Beach (1945)
• an appetitive activity in a relaxed field	Bally (1945)
• an outlet for surplus energy	Spencer (1855)
• offers many choices	Juul (2003)

Characteristics of play	Author(s)
• free (not obligatory) • separate (isolated in space and time) • uncertain (indeterminable) • unproductive (without material production) • governed by rules (contingent conventions) • a form of make-believe (suspension of disbelief)	Caillois (2001)
• to-and-fro movement of collective play	Godamer (1989)

Walther (2003) claims that there are important ontological and epistemological differences between playing and gaming. He asks the following questions: What is play? What is a game? He then describes play as an open-ended territory in which make-believe and world-building are crucial activities. Games are confined areas that challenge the interpretation, optimising of rules and tactics, time, and space.

Play and flow

Play, fun and games are often dismissed as being the frivolous opposite of work: something that children do, not adults. It is erroneous and limiting to define playfulness in this way because there are learners who find pleasure in learning for its own sake and not because of any external rewards – and they are often highly motivated to succeed. If one disparages play with negative epithets such as 'childish' and 'trivial', one denies the intrinsic worth of *flow* which is intrinsic to play.

Csikszentmihalyi, a professor and former chairperson of the Department of Psychology at the University of Chicago in the United States of America, is the father of the concept of flow. Csikszentmihalyi (1990) asks the following questions: What is fun? What makes some experiences enjoyable while other experiences are not? In his work over a period of many years, he has looked at that the factors that make people truly happy, satisfied and fulfilled. In the course of his research into such people, he coined the term 'flow' because many of the people whom he observed encapsulated their experience in this word. In his book, *Beyond Boredom and Anxiety,* Csikszentmihalyi (1975) describes the flow experience as

> one of complete involvement of the actor with his activity ... He has identified a number of elements that

> are indicators of its occurrence and intensity. These indicators include: the perception that personal skills and the challenges provided by an activity are imbalance, centering of attention, loss of self-consciousness, unambiguous feedback to a person's actions, feelings of control over actions and environment, and momentary loss of anxiety and constraint, and enjoyment or pleasure.

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

> The state in which people are so intensely involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it.

Bakker (2004) describes flow as a short-term peak experience that is characterized by absorption, enjoyment, and intrinsic motivation. Lutz and Guiry (1994) defined flow as a state of mind sometimes experienced by

> people who are deeply involved in some event, object, or activity ... They are completely and totally immersed in it ... Indeed, time may seem to stand still and nothing else seems to mater while [they are] engaged in the consumption event.

Csikszentmihalyi (1990) describes absorption in employees as a state of total concentration in which they are totally immersed in their work. Time flies and they forget everything around them. Csikszentmihalyi (1977) also notes that when in the flow state

> players shift into a common mode of experience when they become absorbed in their activity. This mode is characterized by a narrowing of the focus of awareness, so that irrelevant perceptions and thoughts are filtered out; by loss of self-consciousness; by a responsiveness to clear goals and unambiguous feedback; and by a sense of control over the environment ... It is this common flow experience that people adduce as the main reason for performing the activity.

According to Csikszentmihalyi and Csikszentmihalyi (1988), the flow experience begins only when challenges and skills are in balance and of a certain quality. When both challenges and skills of this kind are numerous, the person is not only enjoying the moment, but is also stretching his or her capabilities by (possibly) learning new skills and increasing self-esteem and personal complexity. This process of optimal experience he describes as *flow* (Csikszentmihalyi & LeFevre 1989).

Ghani, Supnick and Rooney (1991) note that a sense of control over one's environment is one of the key characteristics of flow. Csikszentmihalyi (2002) explained, however, that it is actually

> not so much the 'feeling' of control, as the fact that you can act without thinking, without interruption, and [by] making your own choices (for example, BEING in control). If a computer program has a mind of its own, is not responsive to your commands, or is so slow as to appear to be a moron, then you are again brought back to 'reality' and lose flow.

Ghani, Supnick and Rooney (1991) also emphasise the fact that flow always creates a balance between the perceived challenge and the level of skill required to accomplish the task. They state that flow is

> total concentration in an activity and the enjoyment which one derives from an activity ... The precondition for flow is a balance between the challenges perceived in a given situation and skills a person brings to it.

Trevino and Webster (1992) suggest that involvement in a playful, exploratory experience is self-motivating because it is pleasurable and because it encourages repetition. Flow is a continuous variable that ranges between *none* and *intense*. In the online environment, flow represents the extent to which

- the user perceives a sense of control over the computer interaction
- the user perceives that his or her attention is focused on the interaction
- the user's curiosity is aroused during the interaction
- the user loses self-consciousness
- the user experiences a feeling of total engagement
- the user finds the interaction intrinsically interesting

This discussion makes it clear that the activity of playing games in the learning environment has the potential to increase motivation.

Games as educational tools

If one considers that Nintendo's Super Mario Bros.3 has made US$500 million worldwide (according to Nintendo of Denmark, quoted in Smith 2003), one can see that that the game industry is growing fast and may well generate more income than other kinds of media in the future (Smith 2003). One research project on the media used by six to nine-year-old Europeans revealed that 79% of boys and 48% of girls play computer games (Smith 2003). It is therefore understandable

that a lot of attention has been given to the relationship between information technology, playing, and learning over the last couple of years. Slogans such as *Play-and-learn* and *Learn-while-you-play* are typically found in advertisements that promote the use of software packages whose purpose is to integrate a game with learning. However, the design and production of such games are rarely based on any kind of research that has evaluated their potential for learning. Malone (1980) states that the characteristics that make games *fun* do not necessarily make them *educational*.

Not long after the birth of computer games, the first hopes for the potential of learning through games were expressed. Experts hoped that the enthusiasm so obviously generated by playing games could be harnessed in the cause of sound learning. Since then, several commercial games that have met with varying degrees of success have been labelled *edutainment* – a neologism derived from combining the words 'education' and 'entertainment'.

Despite the large industry that produces edutainment for children, commercial games seem to ignore the potential of games for learning. As they are drawing upon a combination of creativity, analysis and their knowledge of other games, game players usually interact with, and explore, systems that are quite complex. Because of this, games do not typically deliver knowledge in a form that is easily measured or evaluated by fixed standards.

A good game offers a series of interesting choices (Meier, in Juul 2003). This characteristic of successful games has commonly been quoted as the first rule for those who want to create good games. Choice appears to be a primary feature of successful games such as *Donkey Kong* and *Tic-tac-toe*. While other games such as *Dance Dance Revolution* do not offer the player interesting choices, tapping the dance mat in a rhythm that harmonises with the music creates enjoyment. This proves that a series of interesting choices is not all there is to a successful game.

The point is that there is no *single* description that explains what makes games attractive. Educators are often challenged to add that special 'something' to the learning environment so that learners will become as engaged in their learning as they seem to be when they are playing games.

Some of the advantages that accrue to people who play games are the development of skills such as level-headedness, analysis, and the ability to understand and to interact with rapidly changing environments (González *et al.* 2001; Game Research Newsletter 2002; Grossman & Minow 2003). The main potential of games,

according to their advocates, lies in the ability of games to increase motivation because of their *interactive* nature and because they place the player in control of the 'learning'. It seems though that most edutainment games have problems in living up to these ideals.

Research shows that edutainment games tend to appropriate control (a crucial factor, as I noted above), and that they narrow the scope of the game universe so that it fits in with the intentions of the educator and the producer of the game (Liestol, in Smith 2003). Most edutainment games do not permit the player to choose his or her own path through the game.

The intention of games is often to convey some specific information about a topic. Limiting the game universe and conveying specific information does not conform well to traditional game dynamics, where simple and general rules, such as exploration and user freedom, are indispensable. And so educators have turned their attention to the adventure genre in which it is easier to focus on information. But even here, they have found, it is difficult to impart the depth that is necessary in an educational topic. In addition, very few studies have delivered hard evidence that games can be used for learning, and especially adults learning. Typically, research has been directed towards the best methods of embedding information in games – the assumption being that this information will somehow be experienced by the player as a covert form of learning.

Because many educators focus mainly on the delivery of information, they overlook the fact that games are often a social activity, even when they are being played in front of a single computer. Many people prefer to explore games in the company of others, and it is often this particular social relationship that creates the dynamics that support the learning process (Game Research Newsletter 2002). By playing together, people supplement the skills of others and typically correct each other's mistakes. The Interactive Digital Software Association (Burke 2000), a trade group representing computer game publishers, released survey results that show that

> an overwhelming percentage of computer and video game players play with friends and family, confirming the view that interactive entertainment brings people together and burying the myth that games are not a social activity.

What makes computer games so appealing? Academics are often called upon to provide authoritative answers to questions such as the one posed above, but while we may frame and carry out research that might eventually provide an authoritative answers, we have to

face the fact that many of these questions cannot be answered in a facile and straightforward manner.

This research study did not set out to create or investigate a digital game where the content that needed to be mastered and in which the outcomes that had to be reached were somehow concealed within the game, waiting to be exposed and internalised by learners as they had *'fun'*. The aim was specifically to use a carefully devised metaphor of the *Survivor*© game to create a dynamic learning environment that would support the learning activities that had to take place.

Adult learners

'Pedagogy' is derived from the Greek words 'παιδί', meaning 'child' and 'αγωγός', meaning 'leader of'. Pedagogy thus literally means the art and science of teaching children. Traditionally, education was often based on assumptions about teaching and learning that evolved between the 7th and 12th centuries in the monastic and cathedral schools of Europe out of their experience of teaching basic skills to young boys. Secular schools were an invention of later centuries in Europe, and public schools were prominent in the nineteenth century. Since many teachers had been exposed to this style of teaching when they were still learning, they simply perpetuated the only model they knew. Because of this, many of the principles and practices of juvenile education were inappropriately applied to adult learners.

The education of adults began long before the 7th century when the formal practice of teaching of children started. Because adult education has been a concern of the human race for a very long time, it is odd that so little has been written about it throughout the ages. The great teachers of all times and in all cultures such as Confucius, Lao Tse, Jesus, Aristotle, Socrates, and Plato, were all principally teachers of adults. Because they suited their methods of teaching to adult learners, they all had a very different concept of teaching and learning from those that are typical of pedagogy. All of them regarded learning as a process of active inquiry rather than the passive reception of transmitted content. It was only after the end of World War I that a growing body of accepted wisdom about the unique characteristics of adults as learners began to emerge.

Many studies over the past couple of decades have shown that play is a conspicuous component of the behaviour of young, developing animals. In spite of this, it is also an important (though less obvious) constituent of adult behaviour (Caro & Martin 1985; Frasca 1999). Some research studies explicitly affirm the importance of adult play (Fagin 1981; Smith 1984). I disagree with the

assertion that play is a more important part of the lives of the immature because adults exhibit just as much interest in the enjoyment of games, even though their gaming preferences are different from those of children in both substance and style. An interest in both play and game activities continues throughout adult life, though in different proportions and in different forms (Piaget 1951).

An effective online facilitator requires a sensitive understanding of how adults learn best. Adults have special needs and requirements as learners that are different from those that are appropriate for children and teenagers. In my opinion there are three important educational theorists that have contributed to the theories of adult learning. They are Malcolm Knowles, Carl Rogers, and Cross. Each has exerted a significant influence in the field of adult learning.

Malcolm Knowles was the first to use the term *andragogy*, to describe adult learning, and clearly to theorize how adults learn. According to him (1990), andragogy is used to refer to 'any intentional and professionally guided activity that aims at a change in adult persons'.

Knowles and Knowles (1959) makes the following statements:

- Adults have a need to know why they should learn, and what they want to learn.
- A wealth of learning and life experiences can assist the adult learners to acquire the new knowledge.

Knowles (1990) provides four definitions for the term 'adult', namely a biological, legal, social, and psychological definition. For Knowles and Knowles (1959), andragogy is predicated on at least four crucial assumptions about the characteristics of adult learners that are different from the assumptions about child learners on which traditional pedagogy is premised. A fifth he added later. These assumptions are as follows.

- Self-concept. As a person matures, his/her self-concept changes from *dependent personality* to *self-directed human being*.
- Experience. As a person matures, he/she accumulates a growing reservoir of experience that becomes an increasingly powerful resource for learning.
- Readiness to learn. As a person matures, his/her readiness to learn becomes increasingly oriented towards the developmental tasks of his or her social roles.
- Orientation to learning. As a person matures, his/her attitude towards the implementation of time schedules changes from one that envisages a

possible postponement of the application of knowledge to one that requires the immediate application of knowledge. His/her orientation toward learning also shifts accordingly from one of subject-centeredness to one of problem-centeredness.

- Motivation to learn. As a person matures, his/her motivation to learn becomes internal or inner-directed (Knowles 1984).

In the *CyberSurfiver* study, the adult learners were distinguished from the others on the basis of their levels of intellectual maturity, self-directedness and intrinsic motivation, as well as their willingness to accept responsibility for their own learning. The learners doing the module all brought with them a wealth of experience that had the potential to become a group resource.

Knowles (1990) furthermore bases his andragogical model on several assumptions that are different from those of a pedagogical model. These assumptions are:

- The need to know. Adults need to understand why they need to learn something before they will show a willingness to undertake the learning. According to Tough (1979), adults that undertake to learn something on their own, will invest considerable energy in probing the benefits that they hope to gain from learning it and the negative consequences to themselves of not learning it. Learners therefore need to be aware of the *need to know*.
- The learner's self-concept. Adults have a self-concept that tells them they are responsible for their own decisions. Once they are in an adult learning environment, they often regress into the roles they became accustomed to when they were in school. Adult learners who are patently and obviously self-directing in every other department of their lives, habitually expect to be taught in the traditional manner they knew in school from the moment they enter an educational situation. They tend to resent and resist facilitators who try to free them from their regressed juvenile dependency on magisterial teachers. This of course conflicts with their subconscious psychological need to be self-directing. Teachers therefore need to help adult learners to make the transition from being dependent learners to being self-directing learners.
- The role of the learner's experience. Adults possess a great storehouse of experiences that they have accumulated over the years and – whether they have benefited from their experiences or not – they have this valuable residuum which they can use as a resource to enrich their learning processes. The young have simply not

had the time in which to accumulate so many life experiences. Adults therefore bring a different quality of mind to learning new things. This means that, in any group of adult learners, a teacher is faced with a wide range of individual differences that have to be taken into account. Differences in the experiences of adults have several consequences for adult education:

- Adult learner groups tend to be more heterogeneous in respect of background, motivation, needs, interests, and goals. Because of this, learning opportunities need to be individualised. There is thus a great emphasis on individualisation in adult education.
- The richest resource for learning often resides in the adult learners themselves. As such, there is a great emphasis in adult learning on techniques that tap in to the experience of the learners, such as group discussions, simulations, and problem-solving methods.
- Adult learners have established mental habits, biases, and presuppositions. These habits often cause them to close their minds to new ideas, fresh perceptions, and alternative ways of thinking. The challenge for educators of adults arises out of their obligation to help adults to examine their own habits and biases, and to open their minds to new approaches.

In designing the *CyberSurfiver* module, the above-mentioned differences were consciously added and accommodated. For example, learners were exposed to the test functionality in WebCT prior to the actual test by means of a Immunity Challenge. They were told why they needed the exposure, and the underlying reasons for doing an online test was explained and discussed at length in the week before the actual test had to be taken. The design made allowance for high levels of diversity, and challenged learners to break away from traditional ways of thinking and to explore the web's potential for learning in a non-traditional manner.

Knowles's theories have formed the basis of much current adult learning theory. Carl Rogers (in Rogers & Freiberg 1993), another educational pioneer, distinguished between two types of learning: cognitive (meaningless) and experiential (significant). Rogers feels that all human beings have a natural inclination to

learn and the role of a facilitator is to encourage such learning. Rogers also emphasizes the importance of learning how to learn, and being open to change. He links a number of factors such as interest, low-threat, and self-initiation to successful adult education. According to Rogers (in Rogers & Freiberg 1993), the role of the teacher is to facilitate experiential learning by:

- setting a positive climate for learning
- clarifying the purposes of the learner(s)
- organizing learning resources and making them available
- balancing the intellectual and emotional components of learning
- sharing feelings and thoughts with learners while being careful not to dominate them or dictate to them

In a more recent theory, Cross (1981) developed the Characteristics of Adults as Learners (CAL) model. The CAL model consists of two characteristics (personal and situational) and attempts to integrate other theoretical frameworks for adult learning such as andragogy (Knowles), experiential learning (Rogers), and lifespan psychology.

In her study on laboratory safety training, Debbie Decker (2002) calls adult learners the *what's-in-it-for-me* learners. She maintains that adults learn best by doing, and retain more information when they actively participate in the learning process. If adult learning is to be effective, the adult learning situation should be interactive by nature and adult learners should be prompted to take an active part in their own education. This implies that facilitators of adult learners should design their teaching and learning activities in accordance with these assumptions, and should encourage learners to take an active role in their own education. Playing games as an instructional method is one of the methods that has proven to be successful.

Table 5 shows some of the studies that have investigated the characteristics and principles of adult learning. Later in this thesis, the way in which adult learning principles manifest in the *CyberSurfiver* case study will be contrasted with the main body of research on adult learning. It is important to note that I will not make the distinction between an adult learner and a pre-adult learner by using *age* alone as the criterion. In this study, intellectual maturity, rather than age, will determine the use of the concept of adult learning.

Table 5: Characteristics of adult learning

Characteristics of adult learning	Author
Adult learners • are autonomous and self-directed • have a foundation of life experience and knowledge • are goal oriented • are relevancy-oriented • are practical • need to be shown respect	Lieb (1991)
Adult learners have • a self-concept that tends towards self-direction • a growing reservoir of experience • a developmental readiness to learn • a problem-centred and present-reality orientation to learning.	Knowles (1984)
Key factors in adult learning are that adults • need to know why they need to learn something. • need to learn experientially • approach learning as problem-solving • learn best when the topic is of immediate value	Knowles (1984)
Adult learning is based on • voluntary participation and mutual respect among participants • collaborative facilitation • a praxis approach to teaching and learning • the necessity of critical reflection on life as a whole • the pro-active and self-directed empowerment of participants	Brookfield (1986)
Adults prefer learning situations that • are practical and problem-centred • promote their positive self-esteem • integrate new ideas with existing knowledge • show respect for the individual learner • capitalize on their experience • allow choice and self-direction	Goodlad (1984)
Adult learners	Decker (2002)

Characteristics of adult learning	Author
• possess a wealth of prior knowledge and experience • appreciate clear goals and objectives • do not want to be surprised or embarrassed in front of their peers. • need good feedback • require material that is relevant • need to take an active part in their own education	
Some principles of adult learning include the fact that • new knowledge has to be integrated with previous knowledge and that this process requires active learner participation • collaborative modes of teaching and learning enhance the self-concepts of those involved and should result in more meaningful and effective learning • adult learning is facilitated when teaching activities promote the asking and answering of questions, problem finding, and problem solving • adult skill learning is facilitated when individual learners can assess their own skills and strategies in order to discover their own inadequacies or limitations for themselves	Dewar (1996)
Key assumptions about adult learners are that • adults are motivated to learn as their needs are progressively satisfied by learning • their orientation to learning is life-centred • adults rely on experience as a rich resource • adults have a profound need to be self-directing • that they enjoy processes of cooperative and democratic inquiry rather than being made to conform to quasi-authoritative canons of received 'wisdom' • adults are all individuals and adult education should therefore make provision for differences in style, time, place, and pace of learning	Lindeman (1926)

Even though *andragogy* is often used in the literature to define only adult learning, it also suggests a learner-focused approach to education that is equally relevant to both adults and children. The essential differences are that it is important in an adult learning

environment (1) to explain to learners why something is important for them, (2) to show learners how they can integrate the content with their prior experience, and (3) how the information can be assimilated and understood. Furthermore, adult learners will not learn until they are ready and motivated to do so. This often requires the teacher to help them to overcome their inhibitions and rise above the traumatic effects of past experiences that have been imprinted by early learning experiences, and so to change their attitudes and beliefs about learning.

Motivating adults to learn

Studies that examine the various motivational aspects of computer-based games abound. They include Maslow's Hierarchy of Needs 1954; Keller's ARCS Model 1979; Eccles's Model of Achievement and Activity 1983; McClelland's Social Motives 1985; Weiner's Attribution Theory 1986; Malone and Lepper's Taxonomy of Intrinsic Motivations for Learning 1987; and Csikszentmihalyi's Flow Theory 1990.

Because I wanted to take into account the unique qualities of various motivational styles, I set out to identify those essential elements that would actively stimulate learning in the adult learners who would participate in *CyberSurfiver*. After scanning the literature that dealt with motivational styles, I decided to base my design on the ideas of Maslow (1954), Keller (1979), and Malone and Lepper (1987), and to a limited extent on Herzberg (1959), O.Houle (1988) and Lieb (1991).

This study will focus on these theoretical foundations of motivation that I have chosen to discuss because of their importance and relevance to understanding and interpreting the events and interactions that took place in the *CyberSurfiver* module. I will begin with Maslow's classic motivation model, and link these theories of motivation to the adult learning process.

Maslow's Hierarchy of Needs

Abraham Maslow is well known for his motivational model that is based on a hierarchy of needs. He maintains that human beings are motivated by unsatisfied needs, and that certain lower needs need to be satisfied before higher needs can be satisfied. Maslow (1954) identified the following five needs as part of his model: physiological needs, safety needs, love needs, esteem needs, and self-actualisation needs.

Physiological (body) needs

Physiological needs are those basic needs such as the need for air, warmth, food, water, sleep, stimulation, sex, activity, protein, salt, sugar, calcium, and other minerals and vitamins. These bodily needs are biological.

When these needs are not satisfied we may experience sickness, irritation, pain and discomfort. Biological needs are very basic because if the human body is deprived of essential nutrition and hydration for a long enough period, the body will die. Our physiological reactions to deprivation motivate us to supply the body with what it needs so that it can re-establish a relatively stable state of equilibrium as quickly as possible. Only once these needs have been attended to can a person be able to concentrate on other things. An appreciation that this is the most basic level of human need is important for our exploration of the dynamics of the *CyberSurfiver* module. For example, at one stage, a learner complained that he only had a couple of hundred rand left until the end of the month and that he had to sustain an entire family on that amount. His fear was that he would not be able to provide for the basic physiological needs of his family because of his unexpectedly high connectivity costs.

Safety (security) needs

Safety needs are those that establish stability and consistency in a chaotic and often dangerous world. In recent times, these needs have mostly been psychological by nature. To fulfil these needs, a person has to pay attention to finding and maintaining safe circumstances, stability, and protection. He/she might develop a need for structure, order, and boundaries. Security needs include being able to live an area that is reasonably well protected from threats. For example, if a man or woman's home is not a safe place because he or she is regularly physically abused in that home, then he or she will not be able to progress to the next level on Maslow's hierarchy. These higher needs can only be fulfilled once physiological needs have been taken care of. Understanding this need was important for understanding the conditions under which learners worked on the *CyberSurfiver* module. For example, some learners indicated that they were worried by the suggestion that they work in the computer laboratories on campus so as to save on their connection costs because they would then have to drive home on their own late – at night. This is not always a safe option, especially in South Africa where crime statistics are among the highest in the world.

Love and belongingness (social) needs

Social needs such as love of family and friends are the next level. At this level, a person begins to feel the need for friends, a lover, children, affectionate relationships and friendship, and even a sense of community. Humans have a desire to belong to groups such as clubs, work groups, religious groups, or gangs. The need to feel loved in a non-sexual way and to be accepted by others becomes important. If one is unfulfilled on this level, on is increasingly susceptible to the

debilitating effects of loneliness and social anxiety. In *CyberSurfiver* this need was especially prominent because most learners demonstrated a strong urge to belong and be recognised as valuable by their groups.

Esteem (ego) needs

Maslow (1954) identified two different sets of self-esteem. He distinguished between the need for the respect of others, and the need for prominence, fame, glory, recognition, attention, reputation, appreciation, dignity and dominance on the one hand, and the need for self-respect, self-assurance, competence, achievement, mastery, self-determination and freedom on the other. Self-esteem can thus either arise as a consequence of some kind of competence or the mastery of a specific task, or it could be an effect of attention from and recognition by others. My understanding of the dynamics of a particular group was often directly related to my understanding the learners' esteem needs in that group. Some enjoyed the recognition they got from being able to help others to gain mastery of technology skills while others indicated that they experienced the fact that they were not voted off as an ego boost.

Self-actualisation (fulfilment) needs

Maslow (1954) describes self-actualisation as an ongoing process involved in a cause outside one's own skin. Self-actualisation needs include the human need for purpose, personal growth, and the realisation of potential. At this level, people become fully functional; they act in accordance with their own preferences and will have integrated personalities. They will work at something that is meaningful and valuable to them. Their work (however humble) will be a profession or a calling to them (in the sense of being a 'calling'). These people are healthy, strong, wise, and creative. The need for self-actualisation is the desire to become more and more what one is, to become everything that one is capable of becoming.

People at this level have an opportunity to maximize their potential. They can seek knowledge, peace, aesthetic experiences, and self-fulfilment. The whole *CyberSurfiver* module was designed to provide learners with the opportunity to reach a level of self-actualisation. This need was also important for interpreting the *CyberSurfiver* artefacts and other data, and for understanding learners' needs for fulfilment. By the end of week 6, most learners had expressed their amazement at the amount of learning and personal growth that they had experienced as a result of the *CyberSurfiver* module.

Maslow's hierarchical theory of needs is often represented as a pyramid, with the larger, lower levels representing the lower needs, and the apex representing the need for self-actualisation. Maslow believed that obstacles to self-actualisation could include

education. *CyberSurfiver*, however, focused on a growth. Learners were encouraged to grow into self-actualising people of the kind that they wanted to be.

Apart from understanding how Maslow's hierarchy accounts for some of the interactions in the *CyberSurfiver* module, it was also important for me to explore the qualities that encourage intrinsic motivation. For that reason, I used Malone and Lepper's taxonomy of intrinsic motivation.

Malone & Lepper's taxonomy of intrinsic motivations for learning

Research into the motivational factors as they relate to educational computer games has in the past two decades largely been based on Malone and Lepper's (1987) theory of motivation. Malone and Lepper (1987) defined intrinsic motivation in terms of 'what people will do without external inducement'.

Intrinsically motivating activities are those in which people will engage for the sake of interest and enjoyment. Malone and Lepper (1987) have integrated a large amount of research on motivational theory into a synthesis of ways to design environments that are intrinsically motivating. They argue (1987a) that intrinsic motivation is stimulated by four qualities, namely challenge, curiosity, control, and fantasy.

Challenge

One of the most powerful individual factors that influences intrinsic motivation is *challenge*. Meyers (in Waal 1990) states that challenge and interactivity are powerful enough to keep learners motivated and engaged in the learning process, especially if learning takes place in the context of a game. Learners pursue tasks that they perceive as challenging, and learners are challenged when they direct their activities toward personally meaningful goals in situations in which the accomplishment of their goals is uncertain. Neither success nor failure should be *guaranteed*. Learners are best motivated when they work toward personally meaningful goals in situations where realisation requires activity at an optimal level of difficulty. If learners believe that they are making acceptable progress toward a goal and if they are experiencing satisfaction from the realisation of that goal, their self-efficacy will be enhanced and their motivation will be sustained. Four factors influence the contribution of challenge to motivation. These are goals, the level of certainty, performance feedback, and self-esteem. When designing *CyberSurfiver*, I explicitly included learner activities that were included because of their level of challenge. In meeting such challenges, learners became

thoroughly engaged in the process of trying to accomplish the tasks.

Curiosity

Curiosity also influences individual motivation because it is stimulated when something in the physical environment attracts attention, or when there is an optimal level of discrepancy between current skills and how these might be improved if the learner engaged in some learning activity. *Novelty* and *interest* are factors that express the motivational use of curiosity. The two types of curiosity that can stimulate intrinsic motivation are sensory curiosity and cognitive curiosity. In designing *CyberSurfiver*, I built an element of curiosity into the immunity and reward challenges. Learners also seemed to find receiving the new assignments for each week exciting because they looked forward to Thursday evenings with high levels of anticipation and interest. I often structured the tribal and individual assignments with novelty in mind – as when, for example, I provided links to academic articles that had to be read and discussed in Morse code.

Control

Another factor that influences intrinsic motivation is control. This refers to the basic human need to control one's environment as far as one can. Learners all want to control what happens to them in the learning environment. Three elements influence the contribution of control to intrinsic motivation. They are cause-and effect relationships, powerful effects, and free choice. It was important for me to keep dimension of control in mind as I explored interactions (especially learner-learner and learner-interface interactions) in the *CyberSurfiver* module because the *lack* of control often diminished learners' satisfaction with the module.

Fantasy

One way in which to make learning more appealing and motivating is by presenting the learning material to learners in an imaginary context which is nevertheless familiar (Malone & Lepper 1987). The fourth factor that influences individual motivation is therefore fantasy. Fantasy is operative when learners use mental images of situations that are not actually present to stimulate their behaviour. Garris *et al.* (2002) state that motivation can be generated by providing optimal levels of informational complexity – and by including 'imaginary or fantasy context, themes, or characters'.

When they engage in learning activities, learners should use their imaginations to meet challenges, satisfy curiosity, exercise control, and experience interpersonal motivations without directly participating in the imagined activities themselves. Cordova and Lepper (1993) show that instructional material that is presented in a fantasy context that learners

find interesting leads to increases in both learner interest and in learning itself. Three issues that influence the degree to which fantasy influences intrinsic motivation include emotional elements, cognitive elements, and endogenous fantasies. The design of the *CyberSurfiver* module fully embraced fantasy as one of the ways to make learning more appealing and motivating because of its use of the *Survivor*© metaphor.

In my opinion, no study that touches on motivation and the use of technology in education would be complete without mention of Keller's ARCS model for motivation (1983). The next section explores the four components of motivation as suggested by him.

Keller's ARCS model

Keller (1983) presents an instructional design model for motivation that is based upon a number of other theories. His model suggests a design strategy that embodies four components of motivation: the arousal of interest, creating relevance, developing an expectation of success, and producing satisfaction by means of intrinsic/extrinsic rewards.

Attention

According to Keller and Suzuki (1988), attention increases perceptual arousal if it stimulated by the appearance of novel, surprising, out-of-the-ordinary and uncertain events. To achieve this, a teacher should increase investigation and inquiry arousal by stimulating information-seeking behaviour. Interest can be maintained by varying the elements of instruction. The teacher could also pose questions and provide problems that have to be solved. In designing *CyberSurfiver*, I specifically paid attention to this component. I wanted to arouse the learners' interest in the web as a resource and medium for communication and did so by introducing a variety of learning activities. The reward and immunity challenges were specifically aimed at stimulating information-seeking behaviour.

Relevance

Relevance in the form of, for example, concrete language and familiar concepts, increases motivation. Teachers are encouraged to provide examples and concepts that are related to learners' previous experiences and values. They should also present learners with clear outcomes and choose learning content that will be remain relevant in the future. My presentation of the *CyberSurfiver* in an online mode addressed the need for making learning relevant for future use. As learners in the field of computer-integrated education, these learners may well be in a position one day to present an online course. Because I feel strongly that there is no better teacher than experience, I designed the *CyberSurfiver*

module to expose the learners to an authentic online learning experience. Because of this, I knew that they would know how to approach teaching online at some future date and that they would also know what to look out for in terms of challenges.

Confidence

If learners are enabled to succeed, they develop confidence. Csikszentmihalyi (1990) states that the level of perceived challenge should balance the perceived level of skill before an optimal state of flow can be acquired. Confidence presents a degree of challenge that allows for meaningful success in both learning and performance conditions. Confidence generates positive expectations. *CyberSurfiver* was designed to challenge the learners to move out of their 'comfort zones' right from the moment of the first week's assignments. My aim, however, was to provide learners with opportunities to achieve small successes by the end of each week. These small successes built their confidence incrementally and encouraged them to tackle the following week's challenges with renewed motivation.

Satisfaction

Opportunities to use newly acquired knowledge or skill in a real or simulated setting may result in satisfaction. Teachers should provide feedback and reinforcements that will sustain the desired behaviour. In order to ensure satisfaction, consistent standards and consequences for task accomplishments should be maintained. In *CyberSurfiver,* I regularly encouraged learners and provided them with both general and detailed feedback in order to keep their levels of motivation high. The learners also experienced feedback in terms of their own artefacts. This provided them with solid evidence of their progress in learning.

Herzberg, O.Houle and Lieb's learning motivators

These 3 scholars are also included in this discussion because they all identified learning motivators or satisfiers that (in my opinion) would also be appropriate and helpful for my design.

Cyril O.Houle (1988) conducted a study on what motivates learners. He identified three categories under which motivational styles could be categorised. They are goal-oriented learners, activity-oriented learners, and learning -oriented learners.

Frederick Herzberg (1959) identified six more adult learning motivators or satisfiers. They are:

- Recognition
- Achievement
- Advancement

- Growth
- Responsibility
- Job challenge

Stephen Lieb (1991) also highlights six factors that serve as sources of motivation for adult learning. These are:

- Social relationships – the making of new friends (meeting the human need for friendship)
- External expectations – the fulfilment of the expectations of someone with formal authority
- Social welfare – an improvement in one's ability to serve humankind
- Personal advancement – the achievement of a higher status at work so as to secure one's professional advancement
- Escape or stimulation – the need to relieve boredom and the necessity of having breaks from the routines of home and work
- Cognitive interest – the satisfaction that comes with learning for the sake of learning or learning to satisfy an inquiring mind

Apart from the above-mentioned motivators, adult learners are often faced with a number of hindrances that impede or prevent their participation in learning, hindrances such as lack of time, money, confidence, interest, a lack of information, scheduling problems, domestic problems (such as those that relate to the necessities of childcare and the need for transportation). If a learner, for instance, does not recognize that he/she needs specific information, or if he/she is worried about the babysitter that is looking after his/her children so that he/she could attend a class, all the facilitator's efforts to help the learner to learn will be in vain. Lieb (1991) suggests that facilitators motivate their learners by setting

- a feeling or tone for the lesson
- an appropriate level of concern
- an appropriate level of difficulty

In addition, learners need to receive specific feedback in the form of their learning results. They need to become aware of the rewards that are the result of learning. Such, for example, may be an understanding of the benefits that accrue from learning. Finally, the learner must appreciate the benefits that accompany learning in order to be interested in a learning area.

These and other motivational models and theories show that there are various factors, such as recognition and cognitive interest, which may encourage adult learners when they undertake learning activities (Herzberg 1959; Lieb 1991). This section also discussed Maslow's Hierarchy of Needs (1954), Malone and Lepper's taxonomy of intrinsic motivation (1987), and Keller's ARCS model (1979). It also explained how I incorporated these factors into the *CyberSurfiver* module.

Group formation

Since *CyberSurfiver* was designed to incorporate a wide variety of interactions such as learner-learner, learner-instructor and learner-content interaction, collaboration and working together in groups played an important part in the research. It was therefore essential for me to review the literature before I designed the CyberIsland learning experience.

Groups are made up of individuals with unique personalities, personal needs, abilities, and levels of self-esteems (Johnson & Johnson 2002). Each personality brings with him/her a unique complexity in terms of needs, skills, and styles. It is impossible to judge any one individual's effectiveness solely on the basis of what we know about him/her as an individual. It is necessary to examine the interaction between an individual learner and the others in the group to see how these personalities fit together to form a workable system (Wood, Phillips, & Pedersen 1996).

While groups may often *appear* to a superficial observer to be chaotic, what we may actually be seeing is a high degree of complexity and many forces working simultaneously (Heldal, Bråthe, & Schroeder 2003). It is important to understand that there are a number of key factors that influence both individual and collective behaviour in a group. These include the environment that surrounds a group, individual members, the size of the group, a group's purpose, and group history (Wood, Phillips, & Pedersen 1996).

Working together in small groups played a major role in the *CyberSurfiver* module because learners were divided into tribes of no more than six members each. These tribes had to collaborate and cooperate with each other on a large scale.

Small groups have been defined by Catchart, Samovar, and Henman (1996) as a 'gathering of people interacting and communicating interpersonally over time in order to reach a goal'.

Samovar, Henman and King (1996) define a small group discussion as 'communication among a limited number of people in a single place, directed toward the achievement of a common goal'.

The phenomenon of groups is based on a number of premises and foundations, such as group size, purpose/common goal, sense of belonging (membership), single place/face-to-face interaction, behaviour, resources, roles, types of groups, small group discussion, group process, time, context, competition, personal differences, and cultural and gender sensitivity. The remainder of this section is dedicated to discussing these foundations.

Small group development

Several different models of small group development is suggested by research as researchers all over the world have studied groups to understand how they are build up. In fact, some 115 different developmental modes for groups exist to demonstrate how a group may progress over time (Conyne 2003). The table below summarises the group development models that are in my opinion most common, namely those of Tuckman (1965), Fisher (1970) and Tubbs (1995)

Tuckman's Small Group Development Theory (1965) entails five stages, namely forming, storming, norming, performing, and adjourning. In the forming stage, group members learn about each other and the task that needs to be accomplished. As they become more comfortable with each other, group members experience conflict and compete for their particular standing in the group. This signifies the beginning of the storming phase. The norming stage is characterised by the establishment of implicit and explicit rules about how group members will achieve their goal. In the performing stage, group members reach conclusions and implement them. As the group project ends, the members break up into what is called the adjournment phase.

Fisher (1970) developed a Small Group Development Theory that consists of four phases, namely orientation, conflict, emergence, and reinforcement. Initially the group members get to know each other in the orientation phase. They may experience primary tensions and a couple of awkward moments before communication rules and expectations are established.

Table 6: Common group development models

Tuckman (1965)	Fisher (1970)	Tubbs (1995)
Forming	Orientation	Orientation
Storming	Conflict	Conflict
Norming	Emergence	Consensus
Performing	Reinforcement	Closure
Adjourning		

During the conflict phase, secondary tensions may arise, and learners will disagree with each other and debate ideas. The emergence stage arrives when the outcome of the group's task and its social structure become apparent. In the reinforcement phase, group members

reinforce their final decision by using supportive and nonverbal communication.

Tubb's Small Group Development Theory (1995) is also divided into four stages, namely orientation, conflict, consensus and closure stages. During the orientation phase, group members start to talk about the problem and they examine the limitations and opportunities of the project. In the second stage, group members resist conformity by evaluating ideas. They also experience conflict during this stage. Then the group reaches consensus as group members compromise, select ideas and agree on choices. During the closure stage, the result is announced and group members reaffirm their support for the decisions that have been made.

Groups take time to develop. How long they will take depends on the size of the group, the frequency of interaction and structural features (among other elements). This development can take from take from anything up to an hour, to an entire course.

Group size

Atherton (2003) states that a group is a collection of people in each other's presence who are aware of each other and who interact with each other. The number of people in a group is significant because it influences the process and outcomes of problem solving in a group. Most sources set the minimum number of people for small group collaboration at three, and the maximum number at between 12 and 15 (Samovar, Henman & King 1996; Atherton 2003; Lovegrove 2004; Millis n.d.).

Samovar, Henman & King (1996) maintain that the minimum size for a group to exist is three people, while the maximum number should be nine or ten. They further believe that a three-person group is the minimum size if certain important group properties or characteristics are to emerge, such as communication networks, leadership, coalitions, and majorities. They also argue that larger groups with 9 or 10 members diminish the participation of individual members, and are not likely to be able to sustain relationships between the members of the group.

It would seem as though efficiency in problem solving drops when a group exceeds these limits in size. They fix their *ideal* group size for problem solving groups at between 5 and 7, with the odd numbers serving to prevent deadlocks (Catchart 1996; Wood, Phillips & Pedersen 1996; Samovar, Henman & King 1996).

In *CyberSurfiver* the group size was initially fixed at six members per tribe. However, as the voting progressed, these numbers dwindled in the original tribes and grew in Tribe 5 (the tribe that was designated for those learners who were voted off).

Purpose or common goal

Groups usually have a mutually interdependent purpose because the entire group is dependent on the success of all the other members (Buher & Walbert 2004). This shared commitment to a common purpose is the factor that distinguishes a group from a mere random gathering of individuals and small group discussions that take place in a casual, unstructured way (Samovar, Henman & King 1996).

In a group, individual members rely on each other to accomplish their common objective. In group discussions, communication is directed toward the achievement of this objective because the group is structured and constrained by the goal that needs to be achieved. According to Johnson, Johnson and Smith (1998), instructors can build positive interdependence into the structure of the group by creating common goals that maximise individual and group productivity.

Samovar, Henman and King (1996) further comment on this by saying:

> Shared commitment is one of the reasons that groups develop norms or standards of behaviour. These explicit or implied expectations are often unique to a given group and serve to unite the group members or to cause rejection when one of the members violates a group rule.

Catchart *et al*. (1996) make a distinction between a task-oriented groups in which a desire to achieve a commonly agreed upon goal is shared, and friendship (maintenance-oriented) groups in which members rely on one another for support and to satisfy their need for inclusion. In both these cases, though, the success of the group depends on the contributions of each individual.

In reality though, individual members may very well not be concerned with or committed to the group task. Such an individual may have personal purposes or issues such as dealing with a sick family pet or relocating a home, that are at cross-purposes with the group's goal. It is therefore true to assert that the level of commitment of individuals will vary in degree. While some group members remain only peripherally involved, others devote a major part of their lives and activity to the group and become centrally involved.
In *CyberSurfiver* all the learners had to work collaboratively in order to reach the outcomes that were stated in the tribal assignments. Each learner also had individually to reach certain goals as specified in individual assignments. Even though learners had to work on these individually, peer support was encouraged by the way in which I designed the module.

Sense of belonging (membership)

Group members usually wish to identify themselves as a member of a group by means of shared characteristics that help participants to define themselves through membership in a particular group. William Shutz, in Cathcart *et al.* (1996), identified three basic needs that motivate people to join groups. They are inclusion, control, and affinity. To feel connected to other humans is the basic need that humans have to belong. Recognition from the group one belongs helps to satisfy this need for involvement. Myers (2003) states that 'belonging happens when you identify with another entity – a person or organization, or perhaps a species, culture, or ethnic group'.

The perception that we are able to manage (control) our destiny is another need that is addressed by group membership. A feeling of power arises out of sensing that we can direct others as well as ourselves.

Humans need and want affection (affinity) from others in relationships, and this need is once again fulfilled by group affiliation. Whether we need friendship, attachment, or concern, groups provide opportunities for us to receive these inputs.

I designed the *CyberSurfiver* module with the aim of ensuring small group membership for all the learners. Each tribe had to create its own name and innovative logo. My purpose in requiring this was that learners would cooperate and support each other in protected small-group environments.

Single place or face-to-face interaction

Traditionally, communication in small groups has been defined as face-to-face interaction as group members need to speak to each other in the group and ad the need arises to respond to nonverbal signs. Group members need to react and respond to one another, and the immediacy of feedback in face-to-face encounters makes this possible. When participants communicate face-to-face in a small group, they can obtain maximum advantage from both verbal and nonverbal communication clues. Group members are able to adjust, control, and correct their exchanges of ideas as they constantly see and hear each other.

When all these communication channels are working properly and when a maximum number of communication cues are available and understood, communication can be optimally effective for a group that works together towards a common group goal.

According to Cathcart *et al.* (1996), the advent of electronic interactions challenges the necessity of the face-to-face element of a small group. Because of this some theorists

have expanded the definition of groups to include *a group of people who interact via a computer network over a period of time to achieve a specific goal* (Atherton 2003). In *CyberSurfiver*, the much-needed synchronous communication was made possible by the introduction of *Yahoo Messenger*. Even though the learners did not have access to traditional nonverbal communication cues, all the other factors that define group interaction were still present. But some learners were compelled by their circumstances sometimes to communicate from different communication environments. Thus, for example, one learner worked from home and another from the office. This sometimes made it difficult to communicate effectively.

Behaviour

Cathcart *et al.* (1996) classify the behaviours and actions of group members by determining whether the behaviour *increases* or *decreases* the group's effectiveness. They used the terms *functional* and *dysfunctional* to indicate whether an individual in the group was increasing or decreasing the productivity and advancement of the group as a whole. Functional behaviour occurs when individuals encourage participation on behalf of quieter members, when they clarify messages about whatever it is they are working towards, and when they create an open, supportive climate. If they do these things, participants are helping to define the goals and direction of the group, increasing their efficiency, and advancing the group's overall purpose.

Dysfunctional behaviour is exhibited when unproductive and disruptive behaviour leads to defensiveness, or a feeling among group members that they are not accepted, liked, or included by the other members. The group no longer functions in a productive way when a group member feels self-protective, distrustful, or threatened in some way. Groups often need to exert enormous efforts to identify and to correct dysfunctional behaviour among group members (Cameron 2000). According to Cathcart *et al.* (1996):

> excessive criticism of another individual, preventing ideas and feelings from being expressed, verbal attacks, and excessive joking, are examples of conduct that limits a group's progress.

In *CyberSurfiver*, learners displayed both functional and dysfunctional behaviour. Each tribe defined its own norms for actions, good behaviour, and its expectations for inclusion in the group. Whether they were explicit or implicit, these rules defined the behaviour of tribal members and made the group stronger or weaker. The success of the tribe depended on whether or not its individual members accepted and applied these

norms and fulfilled the role expectations that were associated with them.

Resources

Apart from having different personalities and attitudes, group members also bring particular abilities to the group. Nobody is talented in every sphere of the human condition. The group needs to find and utilise each member's strength while discouraging any display of skills that might undermine the work of the group.

It is mostly in group discussions that resources are pooled for working towards the common group goal. Failure to do so may be attributed to any number of reasons. These include instances where vital information is intentionally or accidentally withheld, where the value of a particular member is ignored, where the resolution of the task may not require the pooling of talents, or where the strained relationships among group members may preclude free contributions.

I designed *CyberSurfiver* with this principle in mind. As the selection process described in a later chapter of this thesis will show, the initial tribe members all brought their own unique personalities, skills, knowledge, and experiences to the table.

Roles

I am of the opinion that two particular roles, namely task roles and socio-emotional (maintenance) roles, are present in all groups. They each relate to certain expected behaviours that are associated with a specific position within a group. Task roles or behaviours are oriented toward goal completion. People in a group who perform task roles, exhibit behaviour that shows a concern for achieving the stated outcomes for the group and for doing this well. This type of person helps a group to stay focused.

On the other hand, people that display a primary concern for *people* and the relationships that exist among group members, take on the socio-emotional role in the group. They are concerned with and interested in how people are getting along with one another, and they want to know if participants like or dislike each other. They are also sensitive to whether people feel included or hostile.

People do not always choose to play only one particular role in a group. A number of roles may be taken on as members display a combination of task *and* socio-emotional behaviours.

The above-mentioned roles develop differently in each group, and more than one member may perform a particular role. The ideal group environment is created when

there is a balance between a concern for the goal and the well being of the people involved.

Cathcart *et al.* (1996) identify three roles that group members assume. These are relationship-oriented, self-oriented, and task-oriented roles. Relationship-oriented roles deal with interpersonal relationships. Members who play this type of role focus on reducing tension, mediating conflicts and attempting to reconcile differences. These group members encourage less talkative members and create harmony by praising and encouraging others. They are also the ones who exhibit acceptance and tolerance.

Self-centred members may detract from the effectiveness of the group because they often have hidden agendas that are not easy to recognise at first glance. By being (for example) stubborn, resistant, manipulative, and distant, such members may detract from overall group effectiveness by drawing attention to themselves and their personal accomplishments in a non-productive way. A selfishly self-absorbed member may either be self-aggrandizing or he/she can might attack the status or undermine the self-confidence of other group members by attacking the contributions of others or by being generally negative. Such people may also bring a number of unique qualities into the group. For example, they may become the focus of aggression, or act as a release valve for pent up pressures. Nonetheless, their contributions are generally counterproductive.

The group composition in *CyberSurfiver* was not specifically designed to ensure that each tribe had a healthy mix of both types of roles. In the game itself, the roles evolved naturally and spontaneously. Those tribal members who displayed task-oriented behaviour aimed to facilitate goal completion. These learners concerned themselves with task realisation and they tried to keep the tribe focused on its goal by defining objectives, guiding discussions, encouraging people to participate and by sharing personal opinions and helpful information. They also energised the group when interest flagged.

Types of groups

Groups are formed for a variety of reasons. They may be well defined, structured, or spontaneous (McGrath1984). In my opinion, two categories may be helpful here: *obligatory groups* and *voluntary groups*. Obligatory groups are groups that individuals feel compelled to join. Pressure to join such a group can either be subtle or explicit.

Voluntary groups are groups that individuals may join because they desire to be members. Belonging to the group meets the person's individual needs. These groups can be strongly structured (as in a sport team), or

decidedly unstructured – as when a group of colleagues chat in an idle and unstructured way around (say) a water cooler.

CyberSurfiver demonstrated both of these categories (as will be shown in later chapters). Originally learners had no option but to join a particular tribe. Soon after the module started, however, learners asked to be allocated to other groups – especially in those tribes where it soon became evident that a large number of learners were going to be inactive. Problem-solving tribes were created when several learners shared the common tribal tasks and communicated with each other in order to complete the tribal assignments (Borchers 1999).

Group process

Factors such as time, place, the moods of group members, underlying conflicts, styles of leadership, group effectiveness, and norms are all indicative of how a group is interacting. All these elements formed part of the *CyberSurfiver* group process.

Synergy is a group process phenomenon that permits groups to make better decisions than could be made by individuals who work alone (Cathcart *et al*. 1996). A combination of talents and knowledge is (logically) greater than the sum of any one individual's contributions. Groups are often more efficient than individuals because the ideas of one person trigger a response from another person that neither might have thought of individually.

Communication

A large body of literature exists on the topic of communication (Motley 1990; Hauser 1996; Losee 1999). For the purpose of this study, however, I have chosen to define communication as 'a process whereby symbols generated by people are received and responded to by other people' (Samovar, Henman & King 1996).

This definition suggests that communication is a transactional process and not simply a one-way sequence of events involving an active source and a passive receiver. Communication is also symbolic and includes symbol generation, perception, encoding, and symbol-reception decoding. It is thus important to realise that meaning is created by an individual person and that it is not inherent in symbols alone. To avoid a breakdown in communication, two people must assign the same meaning to a word or a gesture. Communication is said to have occurred only when symbols have been accurately received and responded to. The receiver needs to decode the intention of the sender. This is the most significant part of the transaction. According to Samovar, Henman and King (1996), 'Communication is a

dynamic, complex process that produces limitless chances for failure.'

Each individual in the *CyberSurfiver* tribes brought with him/her different language and communication skills. Later discussions will show how easily a breakdown in communication originated due to perceptual differences and conflict.

Time factor

Many instructors fear that if they use class time for group work, they will not be able to cover enough content (Wood 2004). This is because collaboration takes time in face-to-face situations – and it does so in an online classroom as well. Time constraints often affect online group processes. It happens time and again that groups feel that they do not have sufficient time adequately to consider their task. Real, or perceived, time constraints exist in most groups, and these pressures often affect the outcome of the group task (Samovar, Henman & King 1996). The *CyberSurfiver* group was no exception to this, as later chapters will indicate.

Conflict

Within groups, disagreements, mild irritations and conflict scenarios often occur (McNamara 1999). Wood (2003) argues that most of the troublesome cases of conflict in group learning are associated with group assignments that are poorly designed. Often conflict arise over the issue of which member will be allowed to make decisions about who will do what, or who will have to perform the easiest and the hardest tasks. In other cases learners may disagree about decisions that need to be made, and will become impatient with learners who fail to meet deadlines. Occasionally, the conflict is content-based and will arise out of differences of opinion about the quality of another person's work. Blohowiak (2004) confirms the importance of having a conflict resolution process in place. Later chapters will deal in more detail with the conflict that was experienced during the *CyberSurfiver* module.

Context

Groups should not be considered apart from their context because they are always rooted in a variety of other systems such as their families, their work environment, and their financial and infrastructure status (Wood, Phillips, & Pedersen 1996). In these contexts, the group influences the environments in which it is embedded, and is likewise influenced by them.

As group members interact with each other and with their own environments and realities, the potential for conflict that arises out of incompatible demands is ever present. Certain individuals may lack the time and energy effectively to participate in the group. This will give rise to tensions, and, as it does so,

stress levels in the group will increase. This will often lead to a conflict of interest between the demands of two or more systems. Such demands may be those that are generated by (for example) taking the course and those that are generated by (for example) raising a family. Sometimes an individual may sacrifice membership in one of his/her systems, or he/she may reduce investment in a group or system, or may suffer the consequences of burnout (Wood, Phillips, & Pedersen 1996). It is therefore clear that groups interact with their environments in mutually influential ways. The external environment in which group members find themselves may limit the behaviour of the group.

In order to ensure survival, group members must be sensitive to the values of the communities that its members belong to. It is important that each member respect the values that are brought into the group by other group members. Group members do not usually sacrifice their loyalties to outside constituencies when they join a group. Most of the dynamics in the *CyberSurfiver* module arose from the fact that the various members of tribes not only belonged to different communities with different value systems, but also because the individual realities of each member often differed enormously from those of others.

It would be humanly impossible to define the context of the *CyberSurfiver* module without imbuing it with my own particular subjective slant. In the chapters that follow I therefore only report *my* interpretation of the contexts, situations, issues and events as I perceived and understood them.

Competition

Adjacent groups often influence other groups because group morale and cohesiveness increase in a group that perceives itself as being in competition with another group. This often leads to antagonism toward both the other group and towards the individuals in it. Group members frequently evaluate the work of other groups unrealistically: they either evaluate or underestimate the work of their competitors (Wood, Phillips, & Pedersen 1996). In later chapters of this thesis, both the aspects of peer assessment and interpersonal and intertribal competition in the *CyberSurfiver* module will be addressed in more detail.

Personal differences

Every group member brings unique personalities with different attitudes into the group. While some may exhibit functional, cooperative and selfless behaviours, others may bring dysfunctional, competitive, and self-serving attitudes. Conditions that stimulate and invigorate some may retard and trouble others (Samovar, Henman & King 1996).

Self-esteem has an important influence on participation. Those with a high self–esteem are usually more willing to take risks by (for example) offering ideas. They can take criticism, assume their share of blame, and can take credit graciously. By contrast, those with a low self-esteem tend to be hypercritical of themselves and others. They may be defensive about their worth and efforts, pessimistic about what the group can achieve, and they may need constant assurance of their merit, even though they may be inept at fielding compliments and praise (Meyers & Meyers 1973).

In my opinion, members of a group can affect the self-esteem of colleagues by rewarding constructive contributions and by diverting counterproductive activity.
Discussions of small group learning and its benefits have become commonplace in higher education today (Slavin 1991; Kagan 1992; Stahl 1994). Proponents of small group learning argue that working together promotes active learning, critical thinking, conceptual understanding, the long-term retention of material, and high levels of student satisfaction. Small groups also provide opportunities for learners in large classes to interact on a smaller scale, and this helps to prepare learners for the real world.

The importance of interaction

In 1916, John Dewey documented the importance of interaction in the learning process by means of learners construct neutral information into knowledge that has personal application and value (Dewey, 1916). The incorporation of effective interaction has been posited as indispensable if online learning experience is to be successful. With emerging educational technologies flooding the market and breaking new ground every day, opportunities for interpersonal interaction can be seen to have increased dramatically if one compares the current situation with the correspondence courses of the past. In those traditional courses, learners and their facilitators hardly ever had opportunities to interact in real time; their communication was restricted to correspondence that took a significant time to reach the intended audience even after it had been produced. In recent times, there has been a move away from this kind of correspondence course model in which learners send assignments to a teacher who eventually returns them with feedback of varying quality on the assignments. The modern trend is towards an environment in which dialogue and interaction can take place and in which learners may be transformed as their personalities are allowed to become visible in the process.

Both video conferencing systems and interactive television have tried to bridge the

time lag between the production of a message and its reception. However, both these technologies have been adjudged to be expensive and not quite as effective as one might have expected.

With the emergence of the Internet it has suddenly became possible to promote high levels of interaction without the excessively elevated costs that adhere to many other technologies. Some educators are wondering whether the online learning environment will provide adequate opportunities for the kind of *genuine* dialogue and social interaction that are vital elements in the learning process (Hobaugh 1997). Even so, e-mail and bulletin boards have made it easier for messages to be sent from one person to another within a cost-effective learning environment (Woods & Baker 2004). Countless opportunities for interaction have opened up since the online environment has been incorporated into the teaching and learning process. As Anderson (2002) states:

> Due to the increasing power of computers (Moore's Law), their increase in functionality when networked (Metcalfe's Law) and related geometric increases in technical capacity (Kurzweil 1999), there is pressure and opportunity to transform teacher and peer interaction into enhanced forms of content interaction.

Anderson (2002) also states that the development of programming tools and environments for those with average computer skills will continue to make this transformation easier and will in some cases place them within the technical domain of non-programming teachers and subject matter experts.

To illustrate the importance of interaction, Wagner (1997) states that 'distance learning practitioners – particularly instructors and program administrators – seem to view interactivity as the defining attribute of contemporary distance learning experience'.

However, there are those who consider interactivity to be the missing vital element of distance education because this type of environment does not permit the kind of face-to-face interactions of the traditional classroom. There are in contrast many studies that claim that contemporary online learning environments provide learners with a myriad of opportunities for effective interactive learning experiences (Simonson 1995; Wagner 1997). Wagner (1997) argues that interactivity in distance education is *just as good* and *even better* than in the traditional classroom. Simonson (1995) encourage teachers to 'make the experience of the distance learner as complete, satisfying, and acceptable as that of the local learner'.

Interaction in itself has very little value in education. It is possible for learners to interact with the learning concepts without them ever being *assimilated* into the body of knowledge that they possess. Reflecting and validating new content therefore need active engagement. Thurmond (2003) defines interaction as:

> the learner's engagement with the course content, other learners, the instructor, and the technological medium used in the course. True interactions with other learners, the instructor, and the technology results in a reciprocal exchange of information. The exchange of information is intended to enhance knowledge development in the learning environment. Depending on the nature of the course content, the reciprocal exchange may be absent – such as in the case of paper printed content. Ultimately, the goal of interaction is to increase understanding of the course content or mastery of the defined goals.

Whereas Daniel and Marquis (1979) refer to interaction as only those activities in which a learner is in two-way contact with another person or persons, Wagner (1994), defines it as

> reciprocal events that require at least two objects and two actions. Interactions occur when these objects and events mutually influence one another. An instructional interaction is an event that takes place between a learner and the learner's environment. Its purpose is to respond to the learner in a way intended to change his or her behavior toward an educational goal. Instructional interactions have two purposes: to change learners and to move them toward achieving their goals.

Research indicates that a high level of interaction, coupled with social engagement, have positive effects on the learning experience (Wegerif 1998; Moore 1989; Hara & Kling 1999; Gunawardena 1995). De Verneil and Berge (2000) state that it is important in most web-based instruction for a designer explicitly to situate learning in a social context because the learning process takes place within a social framework. Collaboration with others generates powerful motivational forces, especially when a positive social dynamic is constructed. Relational dynamics in an online environment are thus of the utmost importance, and the failure to include this component in the design of a learning experience may produce feelings of isolation among learners and an accompanying decrease in retention rates.

But interaction alone is not sufficient to ensure a positive social dynamic in an online classroom (Woods & Baker 2004) because increased interaction may also lead to higher levels of competition, 'flaming', distrust and jealousies. A facilitator needs to aim to move the relational dynamics from mere interaction to authentic intimacy and interpersonal closeness if he or she wants to set the stage for a positive social dynamic. Interactivity is fundamental to the creation of a learning community. This view is supported by many in the field who focus on the critical role of community in learning (Lipman 1991; Wenger 2001). Interaction is also a key learning component in constructivist learning theories because the value of another person's point of view is usually gained through interaction (Jonassen 1991).

Woods and Baker (2004) propose distinguishing between limited dyadic communication, or transaction, which refers to any two components of the online learning environment that connects, and more qualitatively substantive communication, or interaction, which suggests a more nuanced type of contact. Interaction would then reflect an active engagement with the expectation of some level of ongoing communication. Interaction, therefore goes beyond transaction (Woods & Baker 2004).

The rest of the chapter will accordingly highlight the concept of interaction and discuss its theoretical framework and its implications for the online learning environment.

Interaction

There are many different interpretations to the word *interaction.* In this section I shall discuss the various types of interaction as they have been identified by a number of scholars who are, in my opinion, leaders in the field. By exploring the types of interaction that they refer to, the reader will become aware of the complexities that are involved in online interactions.

Downes (1998) identifies three kinds of computer-based interactions, namely, human-to-human interaction, human-to-computer interaction, and computer-to-computer interaction. Human-to-human interaction refers to activities such as sending and receiving e-mails, discussion lists, news groups, and chat forums. Human-to-computer interaction refers to electronic tests that are marked by the computer and electronic games in which a human being plays against a computer. Computer-to-computer interaction refers to interactions that happen between computers that are unassisted by human intervention (such are web spiders and crawlers and timeservers).

Downes (1998) also makes a further distinction between types of interactions. These are time-based (asynchronous and synchronous) interactions, number-based (one-to-many, one-to-one, and many-to-many) interactions, and location-based (close and distant) interactions.

Garrison and Shale (1990) define all forms of education as essentially interactions between content, students, and teachers. Moore (1989) proposed a three-tiered taxonomy of interactions that is important in distance education, and thus in online learning as well. His three-tiered taxonomy of interactions comprises learner-content interaction, learner-instructor interaction, and learner-learner interaction. The Suny Learning Network (Swan *et al.* 2003) agrees and they write:

> The findings of the research on computer-mediated communication and asynchronous online learning are quite consistent. They point to three (and only three) course design factors that contribute significantly to the success of online courses. These are: a transparent interface, an instructor who interacts frequently and constructively with students, and a valued and dynamic discussion.

Moore's three distinct types of interaction were extended and adapted by many researchers in subsequent years. Hillman, Willis and Gunawardena (1994) contributed learner-interface interaction in order to reflect the role of technology in the teaching and learning process. Burnham and Walden (1997) added learner-environment interaction to the taxonomy. Anderson and Garrison (1998) concluded that teacher-teacher, teacher-content, and content-content interactions also needed to be added to the list. Gibson's research (1998) contributed learner-context interaction as another addition. The table below summarises these contributions.

Table 7: Types of interaction

Type of interaction	Author
learner-content interaction learner-instructor interaction learner-learner interaction	Moore (1989)
learner-interface interaction	Hillman, Willis and Gunawardena (1994)
learner-environment interaction	Burnham and Walden (1997)
teacher-teacher interaction	Anderson and Garrison (1998)

Type of interaction	Author
teacher-content interaction content-content interaction	
learner-context interaction	Gibson (1998)

Anderson (2002) states that high levels of more than one of Moore's types of interaction will be likely to deliver a satisfying educational experience. But he also postulates the following equivalency theorem:

> Sufficient levels of deep and meaningful learning can be developed as long as one of the three forms of interaction (student-teacher; student-student; student-content) are at very high levels. The other two may be offered at minimal levels or even eliminated without degrading the educational experience.

The four types of interaction that have been cited most frequently in the literature are learner-content, learner-learner, learner-instructor, and learner-interface (Chen 2002; Ehrlich 2002; Kirby 1999; Rovai 2002; Sherry, Fulford & Zhang 1998; Smith & Dillon 1999; Swan 2001). In the following section, these interactions, as well as learner-context interactions, will be discussed in more detail.

Learner-learner interaction

Woods and Baker (2004) describe learner-learner interaction as communication between two or more students in a course. I however would like to agree with Thurmond and Wambach (2004) who broaden this definition to portray it as the interaction between learners that can occur between

- one learner and another
- one learner and several other learners
- several learners as a group

Learner-learner interaction is intended to stimulate and motivate the learning of the course content. This type of interaction in the online environment often occurs by means of asynchronous communication tools although other forms of communication, both online and offline, may also occur throughout the duration of a course. Interaction among learners can either be immediate, as with an instant message or a telephone call, or a delayed personal encounter such as a posting on a bulletin board.

I prefer not to rely solely on the above-mentioned definitions, and would like to include that of Cowley *et al.* (2002), who state that learner-learner interaction may be

regarded as a four-stage continuum that includes:

- communication
- collaboration
- cooperation
- community

Communication is characterised by learners talking and discussing, while collaboration is about learners sharing ideas and working together. *Cooperation* means that learners do things together and *community* indicates that all learners are striving towards a common purpose.

Elearning excludes physical interaction, which may have an impact on learning (Beard & Harper 2002). Burge (1994) argues that if effective learning is to take place, occur, four types of peer behaviour are essential in an elearning environment. These are:

- participation
- response
- provision of affective feedback
- short, focused messaging

I agree with Burge (1994) who finds that learners expect these behaviours from their online peers. Participation entails that learners show interest in the educational experiences of others, share their perspectives, and demonstrate their application of knowledge. With the response prospect, learners are expected to respond to questions, be dependable in small groups, provide constructive feedback, and actively participate in dialogue. Affective feedback means that learners show patience, offer compliments, and encourage a learning atmosphere that is both affirming and supporting. With focused messaging, learners are expected to avoid excessive messages that do not contribute to learning within the group.

Teamwork, or collaborative learning, involves learners in working together in groups to complete academic assignments (Alavi 1994; Palloff & Pratt 2001). This form of learner-learner interaction promotes understanding and stimulates critical higher-order thinking. Harasim (1989) states that collaboration contributes to higher-order learning through cognitive restructuring or conflict resolution which allow new ways of understanding the work to emerge because of contact with new and different perspectives. Collaborative projects may lessen feelings of isolation and promote a sense of a learning community (Abrahamson 1998; Palloff & Pratt 2001) in the web-based classroom. Cronjé (1997) confirms that cooperative work projects provide a framework in which students may develop deeper relationships with others.

Thurmond *et al.* (2002) report that there are learners who report *less* satisfaction with those courses in which they are required to participate in teams or in group projects in an elearning (Thurmond, Wambach, Connors, &

Frey 2002). Thurmond *et al.* (2002) assert that the challenge of completing course assignments without the face-to-face contact may explain their dissatisfaction.

Research confirms the need for learners to connect with each other in an elearning course (Atack & Rankin 2002; Swan 2001; Soo & Bonk 1998). In designing interactions for elearning courses, a facilitator should therefore ensure that a sufficient number of opportunities for interaction are available. Some studies indicate that the quality of interactions improved in online environments and that the levels of interaction may even surpass that which is possible in a traditional face-to-face classroom (Lenhart, Lytle, & Cross 2001).

Although many learners express their preference for face-to-face learner-learner interaction, the Internet nowadays acts as an effective medium for discourse. Larson and Keiper (2002) reports that learners who frequently did not participate in a face-to-face situations became more conversational in the online environment. This seems to indicate that the Internet provides a comfortable forum for those learners who previously may have felt intimidated or shy.

According to Moore and Kearsley (1996), learner-learner interaction in the online environment contributes to learning. But Muirhead (1999) also found that some learners thought that their learning was influenced negatively because other learners either did not perform their share of tasks or because they participated too late. On the whole however one may say that there seems to be a correlation between levels of interaction and learners' perceived levels of learning (Fredericksen *et al.* 2000).

Educational practitioners agree that learner-learner interaction is of the utmost importance in an online course (Soo & Bonk 1998; Muirhead 2001; McGinn 2000). Facilitators, who teach online, rate learner-learner interaction as the most important form of interaction – followed by learner-facilitator interaction (Soo & Bonk 1998). Although the pedagogical benefit of learner-learner interaction is often acknowledged, teachers should carefully and consciously design learning activities that encourage positive collaboration and cooperation. Parker (1999) states:

> The sentiment of many faculty is to teach the same course offered on campus with the addition of a few more handouts. To those experienced in the art of distance delivery, it is evident that the addition of a few more handouts is not the solution for interactive course design ... The challenge lies in the refocusing of the instruction to embody a component of interaction.

This refocusing may entail group projects, increased class discussions, and may even include making online discussions count for a large proportion of the final mark for a course. Woods and Ebersole (2003) take this even further and include interaction on a more personal level. They report that encouraging learner interaction in personal discussions contributes to constructive relationships between learners and builds a sense of community and satisfaction with the overall learning experience. Efforts to encourage personal learner-learner interaction promote openness between learners and typically lead to high levels of interaction. As interaction strengthens, opportunities for social penetration flourish. These opportunities in turn promote a climate of interpersonal interaction that may have positive benefits for interaction in course-related discussions (Woods & Baker 2004).

Anderson's equivalency theorem (2002) advocates that one could, if challenged, substitute student-content interactions for student-student interaction by recording a learning event or by supplying the learner with extensive notes that can be accessed asynchronously. According to his equivalency theorem, this should not degrade the education experience so long as the interaction remains on a high level. He also postulates that while student-student interaction is critical for constructivist learning, it is not so crucial for cognitive and behaviourist activities.

In summary, it seems that collaborative learner-learner interaction can help learners to learn the course content and ease feelings of isolation. Even though many learners may still prefer traditional face-to-face contact in certain circumstances, most rely heavily on learner-learner interaction when they find themselves in an online course. When these interactions are experienced as positive, learners may perceive higher levels of learning (Thurmond & Wambach 2004). Clow (1999), and Phillips and Peters (1999) conclude that learners' perception of sufficient interaction with other learners is positively correlated with their levels of satisfaction with the overall online learning experience.

Learner-content interaction

Moore (1989) and Juler (1990) both argue that interaction between learners and content has long been recognised as a critical component of both campus-based and distance education. According to Woods and Baker (2004), learner-content interaction is the process in which learners examine, consider, and process the course information presented during the educational experience. Moore and Kearsley (1996) state that

> every learner has to construct knowledge through a process of

> personally accommodating information into previously existing cognitive structures. It is interacting with content that results in these changes in the learner's understanding.

Learner-content interaction results from students examining and studying the course content (Moore & Kearsley 1996). Thurmond and Wambach (2004) agree and define learner-content as the interaction that results from learners examining and studying the course content. The focus is on the understanding and perspectives that learners gain from the knowledge they construct while interacting with the content. Anderson (2002) also comments that the value of content is dependent on the extent to which it engages learners in interaction and leads to relevant knowledge construction.

Leasure, Davis, and Thievon (2000) identified continuous contact with the content as one of the factors that influenced learners' observations about their learning. Swan (2001) mentions the clarity of course design as an important element. One of the barriers to interacting with the course content is that there is not enough time to participate in coursework (Atack and Rankin 2002). One other factor identified by research is that learners' perceptions of learning are affected by the mode of delivery of course content (Faux & Black-Hughes 2000).

Swan (2001) holds that format consistency may influence learners to perceive online learning as being 'easier'. He argues that each content area should be formatted in a similar manner. In addition, learners perceived more learning to have taken place when consistency in the structural design of the course modules was greatest (Thurmond & Wambach 2004).

In the online environment, learners interact with their course materials through reading their textbooks, journals, and discussion forum comments from other learners and their tutors. The subject content provides an academic foundation for meaningful dialogue within a distance education class. While online discussions are not exclusively a form of learner-content interaction, they are also a form of learner-learner and learner-instructor interaction. In online discussions, students learn the course content from the text supplied by others who are participating in the discussions (Thurmond & Wambach 2004).

According to Leasure, Davis, and Thievon (2000), if learners have more continuous interaction with the content in a web-based course, this results in more learning and in greater overall satisfaction with an online course. Faux and Black-Hughes (2000), however, found that learners preferred to learn the course content in a traditional

classroom setting in which they could *listen* to the content rather than read it.

Learner-instructor interaction

Thurmond and Wambach (2004) define learner-instructor interaction as the interaction that occurs among learners and teachers with the intention of helping to reinforce learner understanding of the material or of clarifying meanings. While Woods and Baker (2004) also state that learner-instructor interaction is communication between the facilitator and the learner in a course, they argue that this type of interaction is not strictly limited to the instructional communication that occurs during the educational experience. According to them, learner-instructor interaction may include personal dialogue, offline communication, and the provision of advice.

One research study suggests that students in online courses required more interaction than the face-to-face courses to achieve a similar degree of student satisfaction (Richardson & Ting 1999). Burge (1994) sees the role of the teacher in learner-instructor interaction as

> giving fast and relevant technical help, sending timely and individualized content-related messages and feedback, with, if possible, summaries of discussion and guidance about resources, and offering affective support (welcome, encourage, show empathy, role model support-giving).

Instructors should thus provide counsel, support, and encouragement to all learners, but the extent and nature of this support would vary according to the educational level of the learners, the teacher's personality and philosophy, and many other factors. Other instructor activities in an online course may include stimulating and maintaining the learner's interest, motivating the learner to learn, providing counsel, support and encouragement to each learner, and providing timely feedback to learners so that they could check that all are making adequate progress. Because of the busy schedules and multiple responsibilities of instructors in higher education, they cannot be available at all times to students. They may not have enough time to look at, use, grade, and give feedback for each learner activity.

Anderson (2002) states that student-teacher interaction has the highest perceived value of all types of interaction amongst learners. He also argues that even though student-teacher interactions are the least scalable type of interaction, it can be automated by the development and use of content resources. This transforms student-teacher interactions such as e-mail and bulletin board messages into student-content ones, like Frequently

Asked Questions, video material, and interactive simulations.

One concern in learner-instructor interaction relates to whether active participation from a facilitator in online discussions puts a damper on learner-to-learner interaction. Facilitators often find that when they hold back, the momentum of the discussions flags. Learners may also complain that the facilitator is not involved enough or too inactive. They prefer the facilitator to remain engaged in the conversation and participate frequently. Some learners feel that learner-to-facilitator interaction is key to the learning process (Cowley *et al*. 2002).

On the other hand, if a facilitator takes control and leads discussions, learners may not extend themselves as much as they would have because the 'authority' is always there to assist and to provide direction. According to Cowley *et al.* (2002), the level of instructor-led interaction must thus be a function of the level of learner.

In a traditional classroom environment, the instructor is physically present and can provide and receive immediate feedback through visual and verbal cues. The online learning environment does not always make provision for these types of cues. The online instructor needs to keep the learners motivated to learn, give appropriate feedback and support, and continue dialogue at a distance (Moore 1989). He believes that it is the role of the instructor or expert to plan and teach the curriculum. The instructor should, however, also stimulate and maintain the learner's interest in what is taught. He/she should motivate the student to learn, and augment and maintain learner interest (which includes self-direction and self-motivation). Oliver and McLoughlin (1997) state:

> Communicative interactions can be used to engage learners, to cause them to reflect on and to articulate ideas. Interactions encourage and facilitate cognition and play an important part in promoting learners' intellectual operations and thinking processes (Oliver& McLoughlin 1997).

In the online environment, learner-instructor interaction is usually computer-mediated. As instructors also need to participate in chat room discussions, bulletin boards and e-mails, it is required that they be competent in using the technology that is used in the course. Often however learners in the online environment not only interact with their instructor; they also interact with their technical support crew and tutors.

It has been found that students who interacted regularly with their instructor and with other students were more motivated and

had better learning experiences (Garrison 1990). Garrison (1993) concludes:

> Few chances to interact with the instructor, limits students' ability to clarify and negotiate instructional goals, explore alternative methods, or construct meaning within a social context based on personal knowledge.

Roblyer (1999) and Hacker and Wignall (1997) conclude that learner perception of what constitutes sufficient interaction with the facilitator indicates the learner's level of satisfaction with the online learning course. Interaction between learners and teachers thus plays a critical role in online learning environment.

Learner-interface interaction

Learner-interface interaction occurs when a learner must use technology to communicate with content, to negotiate meaning, and to validate knowledge with a facilitator and other learners. Hillman, Willis and Gunawardena (1994) contributed learner-interface interaction to Moore's taxonomy so as to reflect the growing role of technology in the distance learning process. They state: 'When dealing with any tool, it is necessary for the user to interact with the device in a specific way before it will do his or her bidding.'

In an online course, the learner-interface interaction can have a tremendous impact on students' learning of the content (Hillman, Willis and Gunawardena 1994). Consequently, instructors need to consider the impact that web-based technology will have on learning when designing such courses. They also need to be sensitive to the need for mediation by noting that technically challenged learners may experience the interface as threatening, and by recognising that the interface may easily become an independent force with which learners have to contend.

Thurmond and Wambach (2004) state that learner-interface interaction concerns the technological media that allows learners to interact with content, facilitator and other learners. The emphasis on learner-interface interaction centres on the impact of the technology on student learning.

This type of interaction may be one of the most challenging for first time online learners because they would have had no prior experience in this regard. Learners would have been exposed to most of the other types of interaction in the traditional classroom. In an online learning environment, learners have to be competent computer users in order to participate successfully. They need to be able competently to use basic equipment such as a mouse, keyboard, and printer. They should also have Internet access and a basic level of Internet literacy.

In selecting media for educational delivery, interactivity should be one of the primary criteria for selection. Kozma (1991) states that there are certain attributes of media that specifically allow for interaction. Learners will use technology to interact with the content, the instructor, and other learners, and without learner-interface interaction, these other types of interaction can often not take place.

Learner-environment interaction

Burnham and Walden (1997) state that interactions within a distance education environment always include an element of learner-environment interaction. They define this type of interaction as 'a reciprocal action or mutual influence between a learner and the learner's surroundings that either assists or hinders learning'.

Gibson (1998) makes a link to this definition by emphasising the role that aspects such as family, the workplace, peer groups, mass media and religion play in the learning process. She argues that the distance learner simultaneously engages and interacts with multiple contexts which extend beyond the classroom. Woods and Barker (2004) refers to this type of relation as *learner-context interaction*.

McInnerney and Roberts (2004) also highlight the importance of social context as a factor in determining the success or otherwise of study. They are of the opinion that the social interaction in the online medium cannot be separated from the social interaction that occurs in the everyday world. Matel and Ball-Rokeach (2001) state that the 'theoretical corollary ... is that the social effects of the Internet should be placed in the framework of people's socio-structural connections, including cultural, ethnic, social and local-physical circumstances'. It is thus important for educational practitioners to have an appreciation and understanding of the non-academic social communities of the learners.

Interaction has long been a defining and critical component of the educational process and context. Multiple studies have concluded that increased levels of interaction result in increased motivation, positive attitudes towards learning, higher satisfaction with instruction, deeper and more meaningful learning, and greater achievements (Entwistle & Entwistle 1991; Garrison 1990; Ramsden 1988; Wagner 1994). Each type of interaction poses its own set of opportunities and challenges.

Conceptual framework

In order to be able to investigate the interactions of adult learners in an online course that is based on the metaphor of a game, a number of concepts need to be

placed in a conceptual framework that guides this study. The framework shows the various categories and their interrelated nature.

This chapter started by examining the element of play in learning by stating that very few educational programmes overtly build creativity and enjoyment into the learning process. We saw that there are arguments against the use of fun (enjoyment), games and humour on the grounds that they might make more traditional modes of education seem boring and they may distract learners from the academic outcomes that are intended to be reached (Moore n.d.; Cordova 1993).

But this chapter also showed that others such as Csikszentmihalyi (1975, 1990), and Malone and Lepper (1987) argue that the inclusion of game-like features may have *positive* effects on levels of attention, motivation and learning. Trevino and Webster (1992) confirmed that involvement in a playful, exploratory experience is intrinsically motivating because of its pleasurable nature. González *et al.* (2001) and Grossman and Minow (2003) also conclude that the inclusion of games in the learning process may stimulate a number of attributes such as level-headedness, the ability to analyse and understand, and an increase in motivation.

In order to understand the possible effect that games may have on adult learners and their levels of motivation, we first need to understand how adult learners differ from children. We need to understand the typical characteristics of adult learning. Earlier in the chapter, these characteristics were explained by reference to the work of Rogers (1993), Knowles (1959; 1990), Brookfield (1986), Decker (2002) and others.

Once the characteristics of adult learning have been understood, there is a need to consider adult learning motivators and satisfiers. The motivational factors that Herzberg (1959) and Lieb (1991) identified were mentioned. Some demotivating factors such as deficits in time, money, confidence and interest, as well as scheduling problems and domestic problems were also discussed.

In order to recognise and appreciate the factors that adult learners find motivating, three different motivational theories (models) were discussed. Maslow's Hierarchy of Needs (1954), Malone and Lepper's taxonomy of intrinsic motivations for learning (1987), and Keller's ARCS model (1983) provide the reader with a theoretical framework by means of which the impact of the *Survivor*© game elements on adult learning can be investigated.

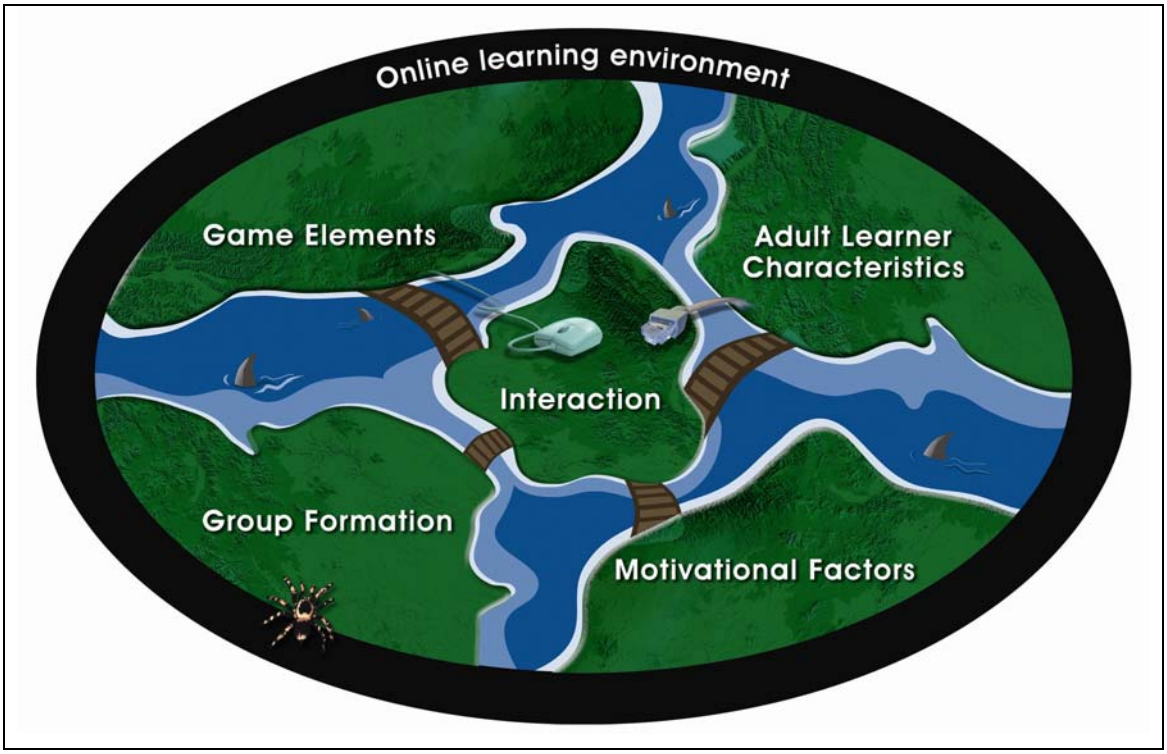
To understand the roles that games play in adult learning, adult characteristics and motivational theories alone may prove to be

insufficient for guiding an investigation into the various interactions that are involved in adult online learning. In addition, a thorough understanding of group formation is needed. The chapter highlighted a number of small group development models (Tuckman 1965; Fisher 1970; Tubbs 1995). It also discussed ideal group sizes, common goals, a sense of belonging, face-to-face interaction, group behaviour, the use of collective resources, team roles, and different types of groups, among others.

It is only when the role of games, adult learner characteristics, motivational theories, and group formation factors are accepted as an indispensable part of the online learning environment, that one can begin comprehensively to examine the various interactions that take place within such a learning community. This chapter identified a number of interactions, namely human-to-human, human-to-computer, and computer-to-computer (Downes 1998). Downes further distinguishes between time-based, number-based, and location-based interactions. Moore (1989) recognised three important interactions in distance education, namely, learner-learner, learner-content, learner-instructor. Additional research by other scholars identified other interactions that exist specifically in a computer-integrated environment. The discussion focused on five specific types of interaction, namely learner-learner, learner-content, learner-instructor, learner-interface, and learner-environment interactions.

The complex interrelatedness of the elements mentioned above establishes the conceptual framework for this study. The following figure (Figure 2) reflects the interrelatedness of the elements that make up the conceptual framework.

Figure 2: Conceptual Framework



Closure

Play and games are not traditionally acceptable modes of adult learning, especially when presented over the Internet. I believe that this is a mistaken attitude because games have the capacity to stimulate both intrinsic and extrinsic motivation, both of which are enormously desirable commodities in the adult learning and elearning environments.

Chapter 2 reviewed literature that deals with the role of games and play in the learning environment. It showed that the introduction of games into any learning environment, be it online learning or otherwise, might increase motivation and attention (Malone & Lepper 1987; Garris *et al.* 2002). Research has also confirmed that by adding elements of fun and enjoyment, games and play can enhance adult learning while at the same time enhancing levels of attention, effort, and concentration (Cordova 1993; Chen *et al*. 1998). The investigation highlighted the characteristics of adult learning and showed how these differ from the learning of children.

I discussed several models of small group development as I tried to understand how these groups are built up (Tuckman 1965; Fisher 1970; Tubbs 1995). I then concluded the chapter by documenting the importance of interaction in the learning environment. This research study aims to investigate the effect

of the *Survivor©* metaphor on adult learners enrolled for an online module about eLearning. We need to investigate the various interactions that are made possible by integrating the modalities of play for adult learners in an online learning environment.

The rest of this study will focus on the dynamics involved between the learners themselves, between the learners and myself as the facilitator, between the learners and the content, between the learners and the Internet technologies, and between the learners and their own environments. In dealing with these different types on interaction, the characteristics of online environments, adult learners, and games will be closely reviewed and related in detailed analysis. The *CyberSurfiver* study aims to show that interactivity need not be excluded from online learning – especially since the introduction of games can be successfully utilised to encourage interaction.

Chapter 2 concluded with the conceptual framework that guided the *CyberSurfiver* study. Chapter 3 will focus on the research design of the study. It distinguishes between the design of the *CyberSurfiver* module and the research study on the interaction that happens in an adult online learning community as a result of the introduction of a game metaphor.

Introduction

As I mentioned in chapter 1, this study was guided by a number of interrelated research questions. The main research questions addressed the dynamics that arose in the groups as a result of the introduction of the *Survivor*© game elements. The research questions are:

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 these questions more explicit, the researcher formulated the following four sub-questions:

- 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 is addressed in chapter 4.)
- How did this module develop over time, and what were the key issues that emerged? (This question is addressed in chapter 5.)
- How did the reality game elements affect the various types of interaction and the group's functioning as a whole? (This question is addressed in chapter 6.)
- What are the complexities involved in teaching and learning by means of a module that is based on a metaphor such as *Survivor*©? (This question is addressed in chapter 7.)

This study aims to address the main questions by dealing with these four sub-questions.

The purpose of this chapter is to present and discuss the research design employed in addressing these questions. An outline and justification of the research methods utilised in designing, presenting and researching the *CyberSurfiver* module is provided in the remainder of the chapter.

The *CyberSurfiver* module was presented as one of a number of modules that make up the Master's Degree in Education (Computer Integrated Education) as the University of Pretoria presents it. Prof Johannes Cronjé, the programme coordinator and also one of my research supervisors, initiated the *Survivor*© concept, and conducted a number of brainstorming sessions with me because I have functioned as the designer and facilitator of the research. During these sessions, we grounded the design of the

module in existing principles as they are set out in the literature on constructivism, games and play theories, adult learning theories, motivation theories, group formation principles, and theories about the various types of interaction that are possible in an online educational environment.

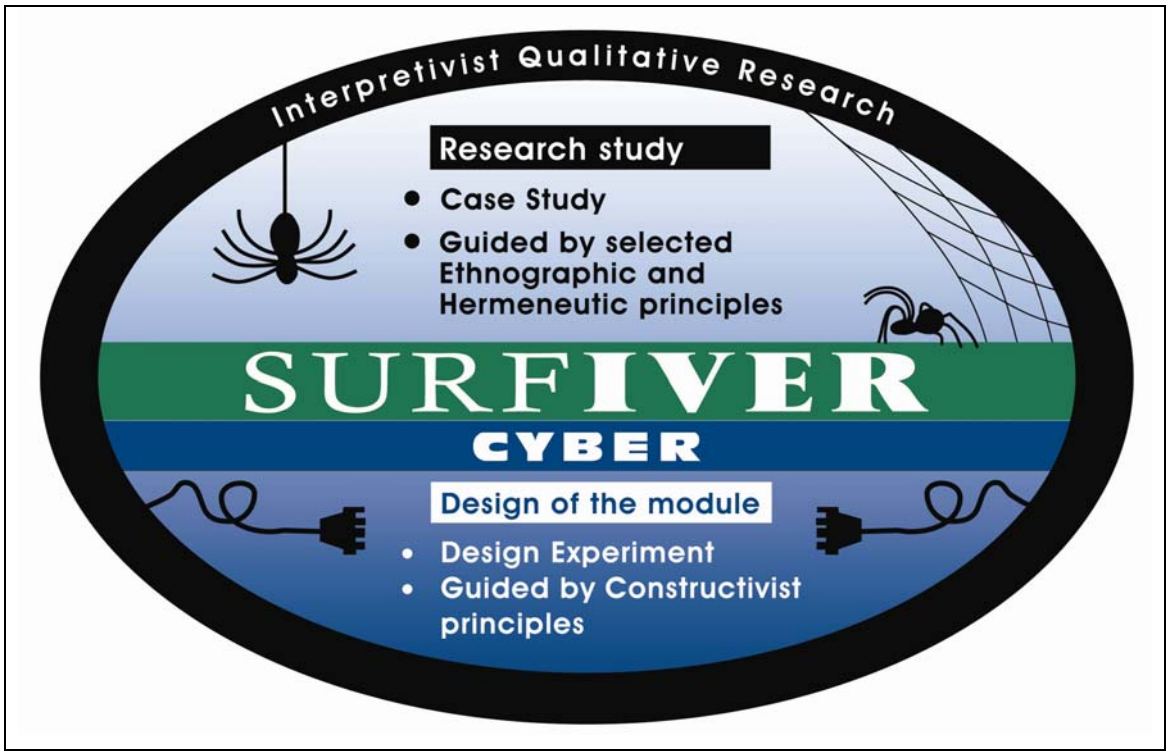
The *CyberSurfiver* module was a design experiment (I use this term synonymously with 'design research') that provided me with the opportunity to investigate the complexities involved in using a metaphor in an adult online learning environment. The module was designed according to the constructivist learning theories in which active learner participation is an important component of the learning process, and in which learners construct their own knowledge while they engage in authentic learning activities (Gagnon & Collay n.d.; Fosnot 1996). By planning and developing the module as a design experiment, I was able to test and refine its educational design. While my main emphasis was on the refinement of practice in the design, I also addressed a number of theoretical issues (Van den Akker 1999).

The amount of research that could still be undertaken by using *CyberSurfiver* as a design experiment is enormous. By this I mean that the *CyberSurfiver* module could still be studied exclusively as a design experiment because it lends itself to this kind of investigation. In this study, I chose to limit the scope of my research to the interactions among members of the online community that already existed because of the decision to use a game metaphor to teach the module. Even though the main focus of this study is therefore not on the *design* of the module, the design is nevertheless crucial to an understanding of the dynamics that arose during the module. I therefore devote this chapter to its examination.

This chapter will deal with the design experiment and the ADDIE Instructional Design model related to the design of the *CyberSurfiver* module. It will also describe the research approach that I adopted in order to study the various types of interaction that took place in the online module. In addition, I shall give special attention to (1) Interpretivism because it dictates the goal of my inquiry, (2) the case study because it determined what *could* be studied, (3) the research method, and (4) the selective influence of ethnography and hermeneutics as they affect this research.

Figure 3 reminds the reader of the research design as it was explained in chapter 1.

Figure 3: Research Design



Paradigm for the study

Fierce debates have raged in the past among the proponents of qualitative and quantitative research (Weinstein & Tamur 1978; Berg 1989; Campbell 1975). I personally regard both qualitative and quantitative methods as valid within the boundaries of their well-understood limitations. I regard both of them as alternatives that may sometimes complement each other. They are not, as far as I am concerned, in competition. For this study I have adopted a mainly qualitative interpretivist approach because my intention has been to provide evidence that is richly textured and layered in its detail for the thesis that I have proposed in connection with this teaching module.

Any attempted definition of qualitative research would of necessity ultimately prove to be elusive, possibly vague, deliberately imprecise and certainly open-ended. The term *qualitative* encapsulates so many research methods that a single definition is almost impossible. Creswell (1998) attempted one when he wrote:

> Qualitative research is an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem. The researcher builds a

> complex, holistic picture, analyzes words, reports detailed views of informants, and conducts the study in a natural setting.

The *CyberSurfiver* study was also guided by Creswell's (1998) five assumptions about qualitative research. They are:

- the multiple nature of reality
- the close relationship of the researcher to that which is being researched
- the value-laden aspect of inquiry
- the personal approach to writing the narrative
- the emerging inductive methodology of the process of research

The *CyberSurfiver* case study clearly presented examples of the multiple nature of reality. Whereas some learners experienced the activities as stimulating and challenging, others found themselves lost and in despair.

My role was not only that of researcher. I was also the designer and the facilitator of the learning experience under scrutiny. As such, I formed close relationships with many of the learners in the six-week period during which the module lasted. I thus also found that tensions arose because the points of view that I had to adopt as I fulfilled my various roles and as I processed interpretation of the realities of the situation were not always readily compatible.

In this case, there were good reasons why I should choose a qualitative approach. Some of the most compelling reasons for undertaking this study in a qualitative manner arose out of the nature of the research questions. These questions focussed on 'what' and 'how' questions – rather than on 'why' things happened in the way they did. Firstly, the study concerned itself with the dynamics that evolved throughout the duration of the online course and on how aspects of the game contributed to this phenomenon. Secondly, the topic needed to be explored in depth because not all the variables could easily be identified. There were also far too many variables to locate and control in a study of a purely quantitative nature.

An advantage that this case study offered me was that it gave me the opportunity to study a number of extremely interesting social interactions at a relatively low price. The overhead costs in this case were low because only a small number of learners were needed to perform the required observations and interpretation of data. The cost of much research is high because the researcher usually requires the services of a number of assistants or collaborators to conduct random-sample surveys and population censuses.

Thirdly, the research called for a detailed and in-depth interpretation of the case. As a single case study was the focus of the research, the depth of the investigation was of utmost importance. Fourthly, the study was conducted by using a large variety of data sources that were obtained from the learners in their natural setting as students. Fifthly, my intention was to include *myself* and my role as designer and facilitator of the course as an integral part of the study. As Byrne (2001) writes: 'Qualitative research assumes that the researcher is an integral part of the research process.'

In qualitative research, learner's descriptions and stories are often scored according to a protocol of carefully designed techniques. This is done so that the susceptibility of qualitative techniques to skewing as a result of researcher or evaluator bias may be minimised. Instead of using those techniques, I used the qualitative technique of hermeneutics. Hermeneutics (meaning 'interpretation') is widely used in many contexts. In qualitative research it is used to attribute meanings to awareness. Hermeneutics can be an original philosophy, a philosophical approach to human understanding, and as a specific mode of analysis (Bleicher 1980). In my case, it provided the philosophical grounding for my interpretivism and my attempts to penetrate and understand the subtle, idiosyncratic, and personal meanings that I encountered in the module. This study therefore is in essence a hermeneutical inquiry into the study of human conduct in a particular online course presented by means of a game.

Interpretivism

The goal of this study is to portray how the *CyberSurfiver* module worked by describing and interpreting the various interactions that took place (learner-learner, learner-facilitator, learner-content, learner-interface and learner-context). It is thus based on an interpretivist paradigm. Erickson (1986) explains the role of interpretive research in the field of education as an attempt to understand classrooms as socially and culturally organised spaces for learning, and as an attempt to make sense of what teachers and learners do, think, feel and say. Both these enterprises are integral to the process of education. Gephart (1999) states that the goal of this paradigm is to describe meanings, to understand members' definitions of the situation, and to examine how objective realities are produced. Interpretive research assumes that access to reality (given or socially constructed) is only possible if we look for it in social constructions such as language, consciousness, and shared meanings. Interpretive research is therefore fundamentally concerned with meaning as it seeks to understand and explicate the subjects' definitions of situations (Schwandt 1994).

Interpretive studies generally attempt to understand phenomena by way of the meanings that people assign to them. Interpretive research does not predefine dependent and independent variables, but focuses rather on the full complexity of human sense-making as the situation emerges (Kaplan and Maxwell 1994). Interpretivists assume that knowledge and meaning are acts of interpretation and that objective knowledge can therefore not exist apart from thinking and reasoning human beings. Even 'hard' axiomatic knowledge (such as one finds in some forms of Mathematics) depends on assumptions that human beings share in a common consensual reality.

The key focus of interpretivism is a search for *patterns* of meaning. Theories that influence this paradigm include symbolic interaction, ethno-methodology, phenomenology and hermeneutics. My interpretive research goals caused me to focus this study on how teaching and learning functioned in *CyberSurfiver*. They ensured that I described and interpreted the happenings and events as they related to teaching, learning, interaction, innovation, and assessment (Reeves 2000).

Interpretive research is mostly characterised as having a qualitative character, even though quantitative and statistical techniques may be used in this type of research. The significant differences between interpretive and traditionally qualitative research is not predicated on the kinds of data that it analyses, but rather on its underlying assumptions.

Interpretive research is hermeneutical in character. Interpretivism and hermeneutics arose in reaction to the philosophy of positivism that dominated the late 19th century and much of the 20th century as well (Schwandt 2000). Boland (1985) states that the philosophical ground of interpretive research is hermeneutics and phenomenology. Hermeneutics is the reading and interpretation of messages and texts. The term has its origins in Greek mythology because Hermes was the messenger of the Greek gods. Although the term applied originally only to the interpretation of biblical texts, its current usage includes the interpretation of secular texts in many different disciplines. The following three axioms characterise hermeneutics: (1) Written texts must be read if one is to make sense of them. (2) Written texts are open to more than one reading (or interpretation). (3) Written texts need to be read in context.

This study describes meanings, aims to understand learner's definitions of their situations, and examines how objective realities are produced (Gephart 1999). I was committed to approach the case study from the point of view of *an interacting individual* (as understood by the interpretive tradition).

The interpretive research in this study is both descriptive and explanatory. It required me (the researcher) to be reflective, self-critical, and thorough. As a result of this interpretive research, I experienced a heightened perception, increased insight, and an expanded sensitivity to what goes on in situations such as those exemplified by the dynamics and interactions of the *CyberSurfiver* learners.

The following section focuses on the design of the *CyberSurfiver* module by means of a more detailed discussion of the design experiments and the ADDIE Instructional Design model.

Design Experiments

The notion of a *design experiment*, or *design research* as it is often called, emerged about a decade ago when Brown (1992) and Collins (1992) first published articles in which they used the term. Others such as Reinking and Pickle (1993) refer to the same concept as *formative experiments*.

Design experiments have their origin in action research, and include some features of the qualitative research movement that started in the 1970s (Reeves 2000). Design experiments can be regarded as formative research that test and refine educational designs on the basis of theoretical principles that have been derived from previous research. Research experiments combine the 'engineering' of a particular form of learning or a particular design with a systematic approach to the study of this form of learning within a particular context. This approach may also be conceptualised as progressive refinement, a concept that was established by those Japanese car manufacturers who instead of waiting for a new model, rather updated their designs on a regular basis. In design experiments, this type of fine-tuning can lead to useful modifications of a curriculum.

According to Colb *et al.* (2003), design research ideally

> results in a greater understanding of a learning ecology, a complex interacting system involving multiple elements of different types and levels – by designing its elements and by anticipating how these elements function together to support learning.

This type of research addresses the complexity that is characteristic of educational settings. It focuses on learning interventions as an interacting system, rather than as a collection of activities, or a list of separate factors that influence learning.

Design experiments are not solely intended to refine practice. They should also address

theoretical questions and issues in order to be effective. Design research should always indeed strive to refine both domain-specific theory and practice. The Design-based Research Collective (2003) argues that design-based research

> which blends empirical educational research with the theory-driven design of learning environments, is an important methodology for understanding how, when and why educational innovations work in practice.

Teaching interventions should embody specific theoretical claims about education, and should reflect a commitment to understanding the relationships among theory, the designed learning intervention, and practice.

The methodology for design experiments is still relatively undeveloped. The challenge for me in the research *CyberSurfiver* was to combine the rigor of methodically conducting a survey and implementing a number of methods of qualitative research, with the chaos in the online classroom, in such a way that it might inform future practice and contribute to theory. Kelly (2003) argues that, as educational researchers, we find some communities that use dialects to support arguments that are directed towards confirmation, while others use dialects that support rich descriptions that illuminate arguments about processes. Design experiments are regarded as emerging research dialect that support arguments that are constructed from the results of active innovations and interventions in the classroom. As such, design research aims to understand the learning and teaching processes in situations where the teacher has also taken on the role of researcher.

According to Brown *et al.* (n.d.), this type of research is usually carried out in complex and 'messy situations of actual learning environments, such as classrooms'.

Because of this, there are a large number of variables that affect the success of the design. These variables cannot be controlled. Because there are bound to be numerous variables in such situations, the design researchers may choose to pay attention only to *some* of them. A design researcher may legitimately pay attention only to the characteristics of the situation that influence only those variables that are of interest to him or her. Instead of aiming to control *all* the variables (as in experimental research), qualitative and quantitative observations are made in order to refine the design. If these observations lead the researcher to find flaws in the design, these should be addressed in conjunction with a careful consideration of all the other design elements.

Brown and Campione (1996) emphasise the fact that a design needs to be regarded as an integrated system. Design experiments should allow learners to be part of the design and research team because they bring their specific skills and insights to the design of the learning intervention.

Design experiments also produce rich descriptions that make it possible to understand what is happening and why it is happening. They focus on interventions rather than an attempts to characterise relationships and events that occur in different educational settings. Data reduction is often a problem because design researchers often collect far too much data in the form of learner assignments and even videotapes of particular scenarios.

The Design-Based Research Collective (2003) propose that design experiments should exhibit the following five characteristics:

- The goals of designing learning environments should be intertwined with the development of theory.
- The development and research should take place through continuous cycles of design, enactment, analysis, and redesign (Collins 1992).
- Design experiments should lead to theories that should be communicated to and shared with practitioners and other researchers.
- Designs should function in authentic settings and should not only document successes and failures, but should also focus on interactions that refine our understanding of the learning issues involved.
- The methods used should document and connect performance to learning outcomes.

Colb *et al.* (2003) also identify five very similar features that they feel should apply to design experiments:

- The goal of design experimentation is to develop a class of theories about the process of learning and the design that supports the learning.
- Design experiments are highly interventionist by nature.
- Design research creates the conditions for developing theories by hypothesising prospectively about the learning process and by fostering the emergence of other potential pathways for learning as the design unfolds. It furthermore also has a reflective side. This means that the assumptions on which the initial design was based are studied by analysis. If the assumptions are refuted, alternatives can be generated and tested.
- As new theories are generated or refuted, the result becomes an

iterative design process featuring cycles of invention and revision.

- The theories developed in the process of design experiments should be accountable to the activity of design and should provide detailed guidance for organising instruction.

According to Hsi (1998), design experiments:

- address learning programmes that involve important subject matter
- are usually mediated by innovative technology
- are embedded in everyday social contexts which are often classrooms
- can serve as models for broader reform
- contribute to fundamental scientific understanding of learning and education

There are a number of ways in which the *CyberSurfiver* design can be analysed. From a cognitive point of view, the summative marks of the learners are available and one can make inferences that one bases on conversations with learners as they were recorded in the data and in the material that was analysed. In terms of resources, the design of this module allowed for a variety of synchronous and asynchronous learning tools, some of which were commercially available and some of which were free. Because human resources were limited, certain support systems were not included in the original design.

Mini-consequential tasks such as the creation of a concept map, the creation of a set of games on a particular topic, and the creation of an online learning experience, were included in the design of the module. Consequential tasks (Scardamalia, Bereiter & Fillion 1981) are tasks in which individual learners carry out research on a particular subtopic that is related to the central topics. After they have completed these tasks individually, they then share what they have learned with other learners, and prepare for, and participate in, a consequential task that requires all of them to combine their individual learning so that all members of the group will be given the opportunity to arrive at a deeper understanding of the main topic and subtopics. These consequential tasks bring the learners' own research cycle to an end. They encourage them to share knowledge across groups, and serve as opportunities for learners to reflect on and revise their previous work (Scardamalia, Bereiter & Fillion 1981). Thus, as in a jigsaw puzzle, all the pieces come together to form an understanding of the whole as the learners come up with new ideas, share what they have learned, and produce products that demonstrate their learning.

The outcomes state that when learners have completed the course, they should be

expert users of the Internet and should know how to use the web as a rich resource for teaching and learning in both synchronous and asynchronous conditions.

A further challenge to me was to integrate my role as a teacher with that of being a researcher. While actively investigating the design, I had to make modifications to the curriculum and to the teaching and learning activities on the basis of my own continuous observation and reflection. Design experiments strongly support the ideals of formative evaluation and of studying the development of learners' skills and knowledge over time. In the case of *CyberSurfiver*, I revisited and revised curricular and instructional decisions on a weekly basis.

In more traditional summative evaluations, a learning intervention is typically measured against a set of criteria or standards (Worthen, Sanders & Fitzpatrick 1997). In a design experiment, repetitive cycles of development, implementation, and research allow the researcher to gather information about the extent to which the design is succeeding. By gaining this kind of formative feedback, the designer is given the opportunity to improve the design of the intervention. It is thus acknowledged that, even though a number of formative adaptations have already been made on the basis of the first cycle of implementation, many more of these cycles may be needed to ensure optimal learning because one has achieved the best possible design under the circumstances.

Design research regards success only as a joint product of design interventions and context. There is thus more at stake than the simple improvement of a particular learning intervention. The intention of the design experiment is to inquire more broadly into the nature of learning in a complex system, and thus to refine theories of learning in the process.

In this study, the design research was carried out in the following way. Initially I studied intensively a number of the *Survivor*© episodes on television so that I could confidently identify the various components that made up the game. I then identified the basic elements of the *Survivor*© metaphor, and worked out how these elements would interact with each other in our academic setting. I based my framework on existing theories of motivation (both active and collaborative) and on constructivist learning premises. By the time I had created the framework and planned the format and logistics of each successive week, it was already time for the module to begin. By that time, only the first week's assignments had already been fully designed and developed, and although all the assignments for the other weeks had been conceptualised, they were still not in a format that was complete. I was thus in the

position to intervene by implementing the design in the first week, analysing the learning processes that were generated, and redesigning the next week's activities on the basis of my findings. Learners provided constant feedback, both overtly and covertly. *CyberSurfiver* thus performed as a prototype for this kind of innovation.

The module began with a certain amount of chaos and misunderstandings for reasons that will be discussed in more detail in chapter 5. I identified and addressed the areas of the design that had created problems and thereafter modified the initial design by scheduling a synchronous face-to-face meeting at the beginning of Week 2.

This modification in the design heralded the beginning of a new phase. Chapter 5 will describe the various phases, its critical elements, and the reasons for making moderations. The initial modification was only the first of many repetitions that had to follow because many of the changes had not yet been tested in practice.

As a result of this study of the dynamics and the various types of interactions that took place on CyberIsland, I were able to contribute to the existing literature by reporting on my findings. In the chapters that follow, I show how the design affected the performance of the learners with regard to the outcomes that had been set for the module.

As a design experiment, *CyberSurfiver* aimed to explore the possibilities for creating a novel teaching and learning environment by using the metaphor of a game that was played out over the Internet. It also intended to contribute to the establishment of a number of theories about online learning. *CyberSurfiver* proposed to advance and consolidate our common knowledge about design and increase the capacity for educational innovation in web-based environments.

In the case of *CyberSurfiver*, the design research has contributed to a deeper understanding of design knowledge and practices as they apply to naturalistic settings. It connected the game metaphor design with the educational outcomes that were specified. The study has contributed to usable knowledge about, and reform of, online instructional practices.

Design experiments provide educational researchers with an alternative model for conducting research because they address the complex nature of learning in classrooms; they extend basic research in cognition; they promote a broad systemic understanding that is able to transform a variety of teaching and learning environments, and they provide valid examples of successful educational transformation.

Design model: the ADDIE instructional design model

The ADDIE model (Gustafson & Branch 1997) is a simple and generic instructional design model that consists of analysis, design, development, implementation, and evaluation phases. This study employed a modified ADDIE model, which borrowed from the most valuable aspects of the above-mentioned systemic approach but which allowed for a less linear systems approach.

During the analysis phase, I developed an understanding of the learning environment and identified learner characteristics. I investigated the technologies that were available for use and reflected on the learners' existing knowledge and skills. I clarified the instructional problem and established the goals and outcomes. In the design phase, I documented the specific learning outcomes, assessment instruments, learning activities and structure of the module, and I made various media choices. The actual creation of the learning environments and learning materials were carried out in the development phase according to decisions that had been made during the design phase. During the implementation phase, the learning activities were revealed to the learners with appropriate levels of cognitive and affective scaffolding. The evaluation phase consisted of two parts, namely, a formative and a summative evaluation. Formative evaluation was present in each stage. After the module had been completed, the effectiveness of the module and the learning materials were evaluated by means of an analysis of the various sets of feedback that was provided by the learners over the six-week period.

Needs Analysis (ADDIE)

The *CyberSurfiver* module was created on the basis of a number of assumptions that guided the design, the development and the implementation of the module. Dey (1993) states that a balance must be struck between one's own prejudices and assumptions and one desire to carry out intelligent and innovative research.

> There is a difference between an open mind and empty head. To analyse data, we need to use accumulated knowledge, not dispense with it. The issue is not whether to use existing knowledge, but how [...] The danger lies not in having assumptions but in not being aware of them.

Because I was a guest lecturer who had been brought in from outside the University to facilitate this module, there were some details of the module about which I was unaware. Without expecting any problems, I carried out my preparations for the module on the basis of various preconceived notions that I had

internalised from my own experience of having been a learner in the same module a couple of years earlier.

I took it for granted, for example, that the target learner group comprised the master's degree students who had enrolled for this particular module. What I did *not* know was that many of the learners were not part of the regular intake of learners for that particular year. Some learners were already in their second year of the master's degree, and were repeating the module because they felt they needed more exposure to the world of online learning. Others were lecturers from the University of Pretoria who had displayed an interest in elearning and who wanted to learn more about web-based learning with the intention of implementing an elearning strategy in their own courses. One learner had to attend the contact sessions in his capacity as student assistant to the course coordinator. His duties in the online section of the course were thus simply administrative. I was thus unfamiliar with the divergent characteristics of the learners in both the design and development phases. I only realised this with some clarity during the course of the module as learners informally interacted with myself in e-mails and instant messages. The module had been designed on the premise that (1) all learners would be master's degree students in their first year of the course, and (2) that they already knew each other.

The *CyberSurfiver* module was designed with the aim of directing the learners on a voyage of discovery. The module aimed to provide learners, while they were on this journey of discovery, with opportunities to construct their own knowledge about the educational advantages and weaknesses of the Internet as a learning environment. The specified outcome of the module was that learners would be able to apply their knowledge about the Internet and its functionalities in an appropriate way in their own teaching, training and learning environments.

After some brainstorming sessions with Professor Cronjé, I created a concept map based on the elements of the *Survivor*© show on television, on existing literature that deals with online adult learning, and my own prior experience in teaching online courses. The map provided a structure for the design of the module that followed. As the module was about the topic of elearning, and I firmly believe in the value of creating an authentic learning environment, the decision was made to present the course online in its entirety. In previous years, this particular module had also been presented online, and thus all learners knew that this was in essence a distance education module. As learners were already using *Yahoo Groups* as their main communication tool, and were already familiar with its basic modes of operation, it was decided that *CyberSurfiver* would also initially use this free service as its home base. This, however, turned out to be another

erroneous assumption because many learners had only subscribed to the e-mail version of the group. This assumption will be dealt with in more detail in chapter 4.

Because one of the specific outcomes of the module was to expose learners to a variety of Internet-based tools, services, products and applications, I wanted learners to experience both commercially available and free products. Because the University of Pretoria uses *WebCT* as its learning management system, this system was available for use in *CyberSurfiver*. Previous contact with the management team of *InterWise* also ensured a free demonstration session of how to use this tool in return for the marketing exposure that the company would get from the session. Most of the other applications that were going to be used were available as 'freeware' from the Internet. As much of the module was devoted to becoming familiar with the resources that were available on the Internet, learners would be encouraged to find existing electronic material instead of paper-based text books and journal articles.

The timeline for the design and development overlapped with the actual implementation of the module. While the main structure of the module was completed by the time the module started, the details of the assignments and learning activities were designed and developed as the module progressed. Even though this approach allowed changes to be made to the original design on the basis of learner and other feedback, it restricted the amount of time available for other kinds of interaction and innovations.

I anticipated on the basis of numbers provided by Professor Cronjé that about 20 learners might be expected to enrol for the module. I also expected that the group of learners who would manifest diversity in terms of home language, culture, age, race, and gender. I knew that all the learners were adults, that they all worked full time, and that many of them had to cope with family responsibilities on a daily basis. I thus realised that the master's group would be extremely diverse in terms of age, gender, culture, prior experience, and background – to name but a few variables.

Because all of the learners were employed full-time, they would all be part-time learners with work-related responsibilities. Since I was employed in a teaching environment, I anticipated that most of them would have Internet access, at least from work. This could not however be verified before the module started, and I was therefore uncertain about whether or not learners would have access to computers that could be connected to the Internet.

From my own experience of the course in previous years, I knew that there would be diverse entry levels insofar as computer and Internet literacy was concerned. The experience of earlier years had shown that

CyberSurfiver learners came to the course with a widely divergent range of computer and Internet skills and degrees of computer literacy. Since I knew that all these learners were students who were enrolling for the *computer*-integrated degree, I assumed that they would all at least have a basic understanding of Internet literacy (i.e. that they would be able to send and retrieve e-mails, attachments, etc.) and that they would possess a minimum level of computer literacy (i.e. that they would be able to function with some degree of skill in a Windows environment).

As it is widely known that the master's degree is administered by hard taskmasters who throw their learners in at the deep end and expect them to work collaboratively if they want to survive, I also took it for granted that the learners would be accustomed to this mode of andragogy by the time the module began in the second half of the year. As the module is part of the master's degree, I expected that most of the learners would be self-directed and mature and possess ample intrinsic motivation and a willingness to participate actively on a daily basis.

I also predicted that many of the learners would be from a teaching or training background because the pre-requisites for the degree include a teaching qualification of sorts. I also realised that many of the learners might well be from educational backgrounds in which the constructivist style of teaching and learning is still both novel and frightening because most education in South Africa in past decades conformed rigidly and even punitively to traditional and teacher-centred models.

Even though most of the learners were employed in the educational environment, I doubted whether any of them would have had any extensive elearning experience. This assumption was based on the limited infrastructure that is available, especially at school level, and on the limited bandwidth problems that are endemic in South Africa.

Since the majority of the learners were teachers, I made the assumption that many of the learners would be working and living under the pressure of (sometimes severe) financial constraints and that being online for long periods of time in South Africa would be an expensive requirement for them, to say the least. Also, teachers are notoriously underpaid in South Africa.

Since our resources were limited, we could not count on the luxury of pulling a variety of experts together in a fully-fledged development team. Because of these circumstances, Professor Cronjé acted as course creator, coordinator and monitor, while I performed the various roles of subject matter expert, curriculum designer, instructional designer, facilitator, technical supporter, game master and researcher.

Although technical support for the learners was not in place, I had access to limited technical support because I was given permission to to set up a space on the experimental server (called Hagar) for the CyberIsland. Learners who elected to work on campus would also have access to support from the university's computer laboratory assistants.

I anticipated therefore that all learners would have daily access to a computer that would be connected to the Internet. If perchance there were learners who wanted to learn about elearning but who did not have access, the laboratories on campus would be able to provide them with the necessary access. I also thought it likely that most learners would have access to a word processor.

The only other technology needed was a sound card, speakers and an optional microphone. I thought that it was probable that most learners would have at least a sound card and speakers, and as a microphone could be bought for less than R80,00, I did not think that the costs would be exorbitant.

Design of the module (ADDIE)

The design of this module was based on constructivistic pedagogical principles and self-directed learning and included a variety of modes such as individual assignments and small group collaboration.

The *CyberSurfiver* module was designed to provide a high-quality learning environment that encourages discovery, integration, application, and reflection. The design specifically focussed on providing opportunities for interaction among the learners themselves, and between the learners and the facilitator. It was designed to create an environment that fosters critical dialogue, integrative learning, mentoring and support, cooperative peer learning and a great deal of exposure to web-based learning activities.

For planning and development purposes, instructional designers are encouraged to build into their programmes strategic amounts of each type of interaction and to develop activities that will encourage the envisaged interaction (Anderson 2002). I therefore incorporated into the *CyberSurfiver* design appropriate opportunities for learner-learner, learner-facilitator, learner-content, learner-interface, and learner-context interactions.

As the module was presented to adult learners with varying degrees of intrinsic motivation, I also created opportunities to stimulate learners with external motivators such as rewards and competitions.

Even though the module may be described as a distance learning experience, it was not

designed to be self-pacing. Since the success of the module closely depended on a good deal of collaboration among learners, learners had to synchronise their learning activities to the weekly activities.

Despite the importance of transfer of learning in education, learners often do not transfer what they have learned in a formal setting into their daily lives (Thurman, 1993; Brown, 1989; CTGV, 1992a, 1992b; Van Haneghan 1990). Some researchers attribute the failure to transfer learning to a lack of similarity between the learning and performance contexts (Osgood, 1949), a lack of previous experience with similar problems, and insufficient instruction on how to conceptualise and solve problems (Rogoff & Gardner 1984). The *CyberSurfiver* module was therefore designed to provide learners with the opportunity to experience online learning at first hand, and incorporated the principle of learning from personal experience. Learners were experiencing the elearning environment from a learner's perspective. The design of the module also included reflective exercises that would help learners to extrapolate from their *learner* experiences to what they would or would not do in both teaching and learning in an online environment.

My own personal teaching philosophy (socio-cultural constructivism) also strongly influenced the design. Duffy and Cunningham (1996) explain this belief as follows:

> Learning is an active process of constructing rather than acquiring knowledge, and instruction is a process of supporting that construction rather than communicating knowledge.

I believe in a learner-centred approach that includes self-directed learning and educational experiences in which learners can take increased responsibility for their own learning. I believe strongly in the value of in creating an online community of practice, and in active learner participation.

The rest of the design of the *CyberSurfiver* module is explained in more detail in chapter 4.

Development of the module (ADDIE)

No single learning management system could supply all the tools and services that all teachers and learners would want or even need to use. Because of this realisation, I included a number of tools, products and services in order to provide learners with opportunities to explore the strengths and weaknesses of the various applications that were available commercially and as 'freeware' from the Internet.

Because (as I have explained above) the learners were already accustomed to using *Yahoo Groups*, I designated this asynchronous tool for use as 'the base camp' for the first week on CyberIsland. Throughout the game, files, such as the introductory comments about the game, spreadsheets with marks, and assignments, were uploaded to this site. *Yahoo Groups* also functioned as the main asynchronous communication medium throughout the module. As the Group was already set up, no further development was necessary apart from the *CyberSurfiver*: Introduction document and the first week's assignments that I uploaded to this site before the first contact session began. I also added new documents as the weeks passed.

Yahoo Messenger was introduced in the second week on CyberIsland, and the only development that was needed here was the document that explained how this tool was to be evaluated by learners as part of a group learning activity.

I introduced *WebCT* in Week 4. This learning environment needed some preparation and development work. After the *WebCT* administration had created a 'course' for this particular module, and it had been uploaded for the learners, I spent some time in developing an appearance and atmosphere for this 'virtual classroom'. I also duplicated everything that was posted to *Yahoo Groups* because I wanted learners to be able to experience the difference between *Yahoo Groups*, a free service, and *WebCT*, a commercial learning management system.

With funding from the National Research Foundation, a BTech Information Technology student was tasked to programme the Voting and Assessment Stations for *CyberSurfiver*. He created both stations by using PHP (a general purpose scripting language that is particularly well suited for web development).

Apart from *InterWise*, the other applications that were used were all free services that are available on the Internet. I tested all these free tools and products to ensure that they would support all the various activities that were required by individual and tribal assignments. The *InterWise* session was arranged with the management team of the local distributors, and guidelines for downloading the client software and other preparations were drawn up collectively.

Implementation (ADDIE)

Chapters 4 to 7 will provide the reader with further information about the implementation phase because in them I will describe in necessary detail the dynamics that occurred between the learners, myself, the technology and their own environments.

Evaluation (ADDIE)

Throughout the six weeks of the module, formative assessment took place and adjustments were made to the design of the module on the basis of feedback from learners. But because time was limited, not all the suggested changes could be accommodated this time around. The next two chapters will indicate that there are a number of changes that still need to be made to the existing design. Many of these changes have to do with creating a less stressful learning environment, with more scaffolding and technical support to supplement the original design. The summative evaluation is currently limited to the data analysis that is reported in this study. I shall also undertake a formal evaluative study based on Tom Reeves' pedagogical dimensions (Reeves 1997) in the near future, but that is not part of this study.

Tapping into ethnography

In many quarters, ethnography has come to be regarded as synonymous with qualitative research (Chambers 2000). However, Wolcott (1995) defines it much more narrowly to refer to those varieties of inquiry that describe or interpret the place of culture in human affairs. Although 'culture' itself has become an ambiguous term that is subject to a variety of interpretations, I agree with Chambers (2000) who states that culture is composed of those understandings and ways of understanding that may be judged to be characteristic of a discernable group.

Ethnography is in essence a method of studying and learning about a person or group of people. According to Spradley (1979), ethnography means describing a culture.

Typically, it involves the investigation of a small group of subjects in their own environment (in the case of *CyberSurfiver*, this is the online environment). The ethnographer attempts to obtain a comprehensive understanding of the circumstances of the few subjects being studied, instead of looking at a small number of variables with a large number of subjects.

While this approach is commonly used by anthropologists to study foreign cultures or primitive societies, Spradley (1979) suggests that it is a valuable means for 'understanding how other people see their experience'.

Ethnographic research is both descriptive and interpretive. It is *descriptive* because detailed, extensive and layered descriptions are essential, and *interpretive* because the ethnographer should determine the significance of what is observed without necessarily gathering statistical information.

Massey (1998) identified the following seven essential characteristics of ethnographic research:

- It is a study of a culture.
- It uses multiple methods and diverse forms of data.
- It manifests *engagement*.
- It regards the researcher as an 'instrument'.
- It produces multiple perspectives.
- It progresses through a cycle of hypothesis and theory building.
- It includes intention and outcome.

In *CyberSurfiver*, the 'culture' we are dealing with is a product of the dynamics of the online learning community. The module provided me with a diversity of materials and events that I could examine by using several methods such as focus groups and a survey. Because of the multiple roles that was fulfilling, I became an active participant rather than simply an objective and distant researcher. Woods (1994) regards *engagement* as one of the most prominent features of ethnographic research. He states that it is a 'long-term engagement in the situation as things actually happen and observing things first-hand'.

Spindler and Spindler (1992) agrees that the 'requirement for direct, prolonged, on-the-spot observation cannot be avoided or reduced. It is the guts of the ethnographic approach.'

The ethnographic principle of engagement is guided by two elements: human connection with participants and an investment in time (Massey 1998). As a researcher becomes a familiar presence, the participants may behave more in accordance with their true characters and be less guarded in their responses. To become part of this culture takes time because both participants and settings need time to show what is going on.

Wilcox (1982) stated that the goal of ethnography is to

> combine the view of an insider with that of an outsider to describe a social setting. The resulting description is expected to be deeper and fuller than that of the ordinary outsider, and broader and less culture-bound than that of the ordinary insider.

In my role as facilitator, I became closely involved with the learners over the six-week period that the module ran. As such, I could interpret the material that was generated during the course of the module both more deeply and fully than the other researchers who studied this module as 'outsiders'.

To my own perspectives (based on my diverse roles as designer, facilitator and researcher), the learners and my research collaborators all brought their own

perspectives. Massey (1998) argues that because the world is experienced *subjectively*, subjectivity is an inevitable feature of ethnographic research. In spite of this, the researcher should work systematically and constantly review the evolution of his or her ideas. He or she should also reflect on why certain choices were made, why certain questions were asked or were not asked, and why research materials were generated in a particular manner.

As each person's view of the world is unique, the ethnographic researcher needs to be open-minded and prepared to challenge existing theories and understandings. All claims about a culture that is being studied must be based on some kind of empirical evidence provided from that culture itself.

Ethnography is characterised by its commitment to modify hypothesis and theories in the light of new data. In *CyberSurfiver*, this concept has been embedded in the formative nature of the design experiment. This type of research was therefore a process rather than an event. As new information presented itself, existing suppositions proved inadequate asking for 'running interaction between formulating and testing (and reformulating and retesting) (Gold 1997).

The *CyberSurfiver* study was intended to provide learners with the opportunity to become familiar with the elearning environment, and evidence of this outcome is apparent in the tribal and individual assignments that they completed.

Ethnography is the study of a culture that is comprised of certain values, practices, relationships and identifications. Researchers who base their studies on an ethnographical approach have to interact with other (often strange) social worlds as empathically as possible. To understand the behaviour, values and meanings of any given individual in the *CyberSurfiver* group, the researcher had to take the cultural context into account.

Because online learning communities, such as *CyberSurfiver*, are complex and multi-faceted, a researcher has to study them by using multiple methods and diverse forms of data in order to 'develop the story as it is experienced by participants' (Woods 1994).

Researchers who use an ethnographical approach need to consider multiple sources of data. These include the researcher's own field notes, video and audiotapes, quantitative data such as survey findings, and other written documents and sources. In *CyberSurfiver* these data sets are generated by using multiple methods that include focus groups, observation, and assembled artefacts.

I opted to incorporate the ideas of Chambers (2000), who states that the value of

ethnography lies in its narrative, in its telling of a story that is based on cultural representations. The *CyberSurfiver* study does not simply tell stories about the online module. It aims to describe what happens in an online course as the result of deliberate interventions such as those that occurred in the *Survivor©* metaphor.

Certain elements of ethnography played an important role in framing the research for the *CyberSurfiver* study in that its aims, methods, possibilities, and problems contributed to a better understanding of the dynamics and various interactions that were involved on CyberIsland.

Research design: case study

The *case study* has been hailed as a major methodological tool in social science inquiry and as a distinctive means for providing valid social knowledge (Sjoberg *et al.* 1991). The term *case study*, however, has multiple meanings. It can be used to describe a unit of analysis or to describe a research method. Stake, in Denzin and Lincoln 2000, argues that a 'case study is not a methodological choice but a choice of what is to be studied. By whatever methods, we choose to study the case.'

In this study, the *CyberSurfiver* module was selected as a unit of analysis for a variety of reasons, among which is the fact that the module provided a scenario in which adult learners could learn by means of the *Survivor©* metaphor *in an online environment*. As a research method, the case studies employed various methods such as focus groups, observation, and surveys. The goal of these methods was to reconstruct and analyse the case from an educational perspective.

With the advent of modern qualitative techniques and the large-scale use of these techniques in the social sciences, the case study has been employed as a useful and important strategy for social analysis. In this section, I will provide a reasoned rationale for using the case study approach. I shall discuss the issue of methods in the social sciences from a broad philosophical perspective and will provide a justification for the significance and widespread use of case study methods.

Feagin *et al.* (1991) define the case study as an 'in-depth, multi-faceted investigation, using qualitative research methods, of a single social phenomenon. The study is conducted in great detail and often relies on the use of several data sources.'

They further state that the case study is an ideal methodology when a holistic investigation is needed. This reasoning indicates that the appropriate strategy to have followed in the *CyberSurfiver* study was

that of a case study. Snow and Anderson (in Feagin *et al.* 1991) also state:

> The quintessential characteristic of case studies is that they strive toward a relatively holistic understanding of cultural systems of action. By cultural systems of action, we refer to sets of interrelated activities and routines engaged in by one or more networks of actors within a social context that is bounded in time and space.

Their holistic approach is therefore a prominent feature of case studies. It seeks to understand people as they experience their natural everyday circumstances. It offers the researcher empirical and theoretical gains in understanding larger social complexes of people, actions, and motives. Any part of a system can only be understood within the context of the entire system. It was therefore important in this study to refrain from trying to understand any part of the group in isolation. To remove any discussion from the *total* context would have produced distortion. I avoided analysing the parts of the group communication out of context because the components can only be understood in the light of the system as a whole.

A case study usually assumes a world of complexity and plurality than a world of simplicity and uniformity. It assumes a richness of texture and subtlety of nuances in social worlds.

Palmquist (2002) states that the term case study refers to

> the collection and presentation of detailed information about a particular participant or small group, frequently including the accounts of subjects themselves. A form of qualitative descriptive research, the case study looks intensely at an individual or small participant pool, drawing conclusions only about that participant or group and only in that specific context.

Lincoln and Guba (1985) describe the case study structure as consisting of a problem, a context, the issues, and the lessons learned. Creswell (1998) characterises a case study as

> an exploration of a 'bounded system' or a case (or multiple cases) over time through detailed, in-depth data collection involving multiple sources of information rich in context.

Yin (1989) observed that the case study investigates a phenomenon within its real-life context while permitting uses of multiple sources of evidence by the researcher. One of the principal arguments for the use of a case study is that it provides a way of studying

human events and actions in their natural surroundings. The case study enables a researcher to make observations about people as they go about their real-life business. For this study, the *CyberSurfiver* module provided the researcher with a real-life online learning community that could be examined by means of the multiple sources of data and material that the module generated. It enabled me to record interactions as the learners engaged in online learning activities.

The benefit of the case study in the current research is that it enabled me to make a rigorous and holistic investigation of the dynamics that ensued as adult learners played a difficult game in an online environment. This study used the case study method because the online module presented contextual material with clear-cut boundaries and because the setting of the case could be clearly delineated (Creswell 1998). A large amount of information about the case was available which further deepened the overall picture. I used the *CyberSurfiver* study to examine the interplay of variables and to provide as complete an understanding of the dynamics as possible.

This research also focussed on a single case study as opposed to a collective, multi-sited or within-site case study. Leedy's (1993) definition of a case study is assumed in this research. He writes:

> Sometimes researchers focus on a single case, perhaps because its unique or exceptional qualities can promote understanding or inform practice for similar situations.

It was decided to focus on one case only in order to keep the overall analysis clear and specific, and to avoid lack of depth or the dilution of the overall analysis. Although a large number of cases might have strengthened any attempt at generalisability, this term holds as little meaning for this particular study as it does for many other qualitative researchers (Glesne & Peshkin 1992).

Case studies present a number of unique characteristics. *CyberSurfiver* provided the opportunity to carry out the analysis from multiple perspectives. This means that I considered not only the experiences of the learners as my primary focal concern, but also my own perspectives and those of the course co-ordinator and my fellow researchers. The case study focused on the holistic analyses of *CyberSurfiver* as a bounded system.

Case studies make a greater allowance for an analysis of actual social processes than do other modes of research. The case study is typically longitudinal as it is conducted over a period of time. This facilitates the possibility of capturing and analysing events and

happenings, interactions and relationships, and groups as they emerge and evolve across time. In the six weeks that *CyberSurfiver* ran, the intensity of the pace and the opportunities for collaboration provided a wide range of interactions for purposes of analysis.

Case studies have an open-ended emergent quality that facilitates the discovery of unanticipated findings and data sources. The case study usually begins with a broad, general set of questions about the phenomena under investigation and then becomes more focussed as the research progresses. Initially they are explorative, but eventually serendipitous components may lead to formulate new questions and foci for investigation. This makes for a dynamic, recursive research process. In *CyberSurfiver*, many aspects that are dealt with in chapters 4 to 7 only surfaced after many cycles of reiterative reading and rereading of the materials had been made.

Various criticisms of case studies are quite regularly made. The personal interpretation of a single investigator may be vulnerable to criticism on various counts. The researcher is often intimately engaged with a study, and this might make it susceptible to the idiosyncratic biases of an investigator. A case study can invoke no more general principles than those supplied by its own data. By using a team approach with more than one observer, one can minimise such a weakness. If several observers are employed, and each compares and crosschecks his or her findings against those of the others, this obstacle may be overcome. While I do not deny that my subjectivity and biases may have influenced my findings, I have tried to declare my biases as openly as possible, and I have triangulated my findings by confirming my interpretations by investigating other sources such as the data sources my research collaborators. In the *CyberSurfiver* study, the three research collaborators investigated the case study from different points of departure, and they constantly crosschecking their findings with one another.

The costs involved in studying a smaller group of subjects in greater detail and depth would have been problematic. In *CyberSurfiver*, the costs of being online for long periods of time had serious financial implications for nearly all concerned. However, since being online was an essential part of the entire process, both in terms of the design and the implementation of the module, it was necessary to incur these expenditures.

Case studies cannot cast light on propositions that are derived from prior research and on variable interrelationships. Single case studies have some limitations in this regard. However, even single case studies can provide some proof of links between phenomena. If the detail and depth of the research enables the

researcher to propose a highly suggestive theory on the topic, it might well point the way to further work by other students.

Insufficient quantification could also be seen as problematic. Limited ability to prove relationships between variables because of the absence of statistical data is regarded as another problem in this context. In defence of case studies of this kind, I agree with Cooley (1930) when he states that a purely statistical approach does not take us far in understanding human beings in their wholeness. The qualitative nature of a literary narrative approach can also be precise and disciplined. A case study permits the researcher to examine the complexities of life as well as the impact on beliefs and decisions in a complex web of social interactions. This type of study allows the researcher to discover how systems of interaction networks develop and operate, and it also allows the researcher to study how learner's individual roles that emerge out of interactions among other learners. In *CyberSurfiver* I was able to discover social interactional patterns that occurred among these learners by using qualitative measures.

Generalisation is not one of the characteristics of case studies. Kaplin (1964) states:

> Generalization must be truly universal, unrestricted as to time and space. It must formulate what is always and everywhere the case, provided only that the appropriate conditions are satisfied.

It is therefore understood that generalisations must be a-historical and context free. This makes it impossible for case studies, with their commitment to the contextualisation of social action and process, to be fully generalisable. An aim of the *CyberSurfiver* study was not to be able to produce generalisable findings. This will be discussed in more detail in a later section.

Case studies, however, also present a number of possible advantages. More detailed information of a three-dimensional kind is made possible by case studies than by statistical analysis. The case study is a flexible scientific tool that permits textured data that contains a richness of depth in the description and analysis of events. Case studies seek to record interactions by framing them within interpretive categories that are complex, nuanced, flexible, subtle and open to reiterative *ex post facto* adjustments.

This particular case study has a number of exceptional and unique features that made it ideal for in-depth study. In its first cycle of implementation, it may have presented with a number of design issues that needed to be straightened out. But because imperfections were identified in *this* case, future practices

may benefit by being better informed from the outset.

I concentrated in this study on the effect of the introduction of the *Survivor©* game elements on the elearning experience of the adult learners enrolled for the module. In my unique position as a guest lecturer, I could afford to experiment with different teaching strategies other than the ones learners were traditionally accustomed to experiencing. In addition, the MEd Computer-Integrated Education degree is known for the controversial teaching methods that have often been applied in classes. It was therefore an ideal course in which to test the influence of a metaphor such as *Survivor©*.

The readers of this *CyberSurfiver* thesis should be able to observe the learners at close range and get a sense of what drove them. In this study, I observed, reconstructed, and analysed the *CyberSurfiver* case. I studied individual and collective interactions, common patterns of behaviour, and social structures. The case study method was therefore appropriate because it strove to 'highlight the features or attributes of social life' (Hamel 1993).

I identified the common patterns of behaviour, beliefs, and rituals that characterised the life of an online learning community in its various manifestations. This was investigated and understood by attentively observing the behaviour of the learners in the *CyberSurfiver* community. It furthermore required an understanding of the meanings that learners assigned to their own patterns of behaviour, beliefs, and the rituals prevalent in the elearning community. Many of the observations were informed by the reflections of the learners.

As the facilitator, I became integrated with the group of learners and had regular contacts with them over the six weeks during which the module was presented. I became involved in their daily lives and customs. As Becker (1970) states:

> To understand an individual's behaviour, we must know how he perceives the situations, the obstacles he believed he had to face, the alternatives he saw opening up to him.

First-hand observations and information were meticulously noted in both field notes and a research diary, and were recorded in a way that I hoped would faithfully mirror the peculiarities of the *CyberSurfiver* community.

The advantage of case studies is that researchers who utilise them can deal with a perceived reality behind appearances, with the contradictions and dialectical nature of social life, as well as with a whole that is more than the sum of the parts. The case study

approach provided me with fundamental sociological insights into the dynamics generated by learners and their elearning communities.

Data/material collection

Each of the research methods discussed above uses one or more techniques for collecting empirical data. These techniques include interviews, participant observation, and fieldwork. In *CyberSurfiver*, multiple sources of information were gathered in the data collection phase in order later to provide the basis for the detailed picture of the dynamics and interactions that took place during the module. The data collection procedures that were employed permitted the researcher to examine the phenomenon in great depth and detail.

The sources were tapped by a combination of methods that ranged from participant observation and informal conversational interviewing to the systematic surveying of written and auditory records. In the table below, the various data collection sources that were used are tabulated.

Table 8: Sources of data

Source	Clarification
Electronic group messages	*Yahoo Groups* offers a group service that allows both facilitators and learners to send public messages to others in the group. Although these messages can be accessed on the web in a bulletin board mode, group members also have the option of receiving the messages in e-mail format (as if a listserv). Most of the communication in this module took place by means of this technology.
E-mail messages	The *WebCT* learning management system was introduced at a particular point during the module. A number of learners used the *WebCT* e-mail facility to communicate, mainly with the facilitator. The facilitator also made her private and work e-mail addresses known to the learners. These addresses were often used in private discussions that took place privately.

Source	Clarification
Instant messages	*Yahoo Messenger* allowed learners to send instant messages to each other and to the facilitator when they were online at the same time. At times offline (asynchronous) messages were also sent and received. The messages sent to and from the facilitator were used as a source of information.
Sound files	Individual Assignment 4 required learners to produce a sound file of approximately 30 seconds in which they were asked to give their impressions of the first week on the CyberIsland. These sound clips had to include at least one positive and one negative comment.
Formal test responses	Many of the responses to questions asked in the formal electronic test during week six of the module contained valuable insights into the learners' thinking about a number of issues relating to the course. The responses to one question in particular were used: *Evaluate our eLearn2002 community against the 8 foundations for building and growing successful elearning communities*.
Survey responses	As one of the incentives to get the facilitator to mark their tests, learners had to complete a survey that aimed to investigate their feelings and responses with regard to a number of issues concerning the way in which the module was presented.
Personal conversations	While these were limited to the three contact sessions (tribal councils), many personal conversations also took place by means of private e-mails and instant messages.
Academic articles	Individual Assignment 13 required learners to write a publishable article on a topic related to their experiences in the module. These articles provided valuable insights into learners' experiences of the module.
Individual home pages	Each week learners were asked to add technologically challenging features to their web sites that were hosted on a server called Hagar. These sites were utilised as a source of information.

Source	Clarification
Questionnaires	A fellow researcher requested learners to complete a paper-based questionnaire that related to their affective experiences during the module. These results were also incorporated in the study.
Video of final contact session	The module concluded with a final Tribal Council meeting which was video-taped. The main purpose of the meeting was two-fold: to announce the final Grand Prize 'Surfiver', and to conduct an informal debriefing session. The video was transcribed and analysed.
Field notes and research diary	These included notes about the pedagogics of the module made by the facilitator as the module progressed and other research-related notes made by the researcher during this time.
Focus groups	A consultant hired by the co-researchers in the team held two focus group sessions. The results of these sessions were transcribed and used in the analysis phase.

Case studies are likely to be much more convincing and accurate if they are based on several different sources of information that are patterned on a corroborative mode (Selfe 1985). Cross-checking data from multiple sources helped to provide a multidimensional profile of composing activities in the *CyberSurfiver* case study. Merriam (1985) suggests

> checking, verifying, testing, probing, and confirming collected data as you go, arguing that this process will follow in a funnel-like design resulting in less data gathering in later phases of the study along with a congruent increase in analysis checking, verifying, and confirming.

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 that were 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 that took place while the online module lasted.

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.

Typically, a case study researcher uses interviews and documentary materials without using participant observation. The distinguishing feature of an ethnographical approach is that the researcher spends a significant amount of time in the field. The fieldwork notes and the experience of living there become an important addition to any other data gathering techniques that may be used.

Case studies and design experiments permit the researcher to assemble complementary and overlapping measures of the same phenomena. In this study, a large variety of data sources were available to investigate and analyse. These sources were used to assess the nature of particular events, as well as the motives and interests of learners. Sources were used to cross-check and thereby to confirm observations as well as claims based on those observations.

In order to preserve the atmosphere, excitement, and flavour of the original exchanges, the content of learner quotations in the chapters that follow has not been touched up or improved upon. Where necessary, though, for easier reading, punctuation, and spacing were included and obvious typing and spelling errors were corrected. This practice is called the 'silent correction of quotations' and is regarded as a legitimate editorial practice.

Mode of analysis

Most of the modes of analysis in qualitative studies are concerned primarily with textual analysis, whether it is in verbal or written form. As a mode of analysis, hermeneutics suggests a way of understanding textual data. The Oxford English Reference Dictionary (1996) defines hermeneutics as:

> The art, skill, or theory of understanding and classifying meaning. A hermeneutic interpretation requires the individual to understand and sympathize with another's point of view.

Hermeneutics, as an analytic data technique, is the theory and methodology of textual interpretation and explanation. According to Radnitzky (1970), the most fundamental question in hermeneutics is: 'What is the meaning of this text?". It is axiomatic in hermeneutical practice that it is not possible properly to understand any one part of a work until one has understood the whole. But conversely it is not possible to understand the

whole without also understanding all of the parts.

Taylor (1976) states:

> Interpretation, in the sense relevant to hermeneutics, is an attempt to make clear, to make sense of an object of study. This object must, therefore, be a text, or a text-analogue, which in some way is confused, incomplete, cloudy, seemingly contradictory – in one way or another, unclear. The interpretation aims to bring to light an underlying coherence or sense.

There is an inevitable degree of subjectivity in the hermeneutical analysis and arrangement of the data that is mined. Ethnographers respond to charges of subjectivity by emphasizing that their approach avoids preconceived frameworks and derives meaning from the community informants themselves. Qualitative methods such as survey instruments, on the other hand, often reflect the preconceived conceptual categories of the researcher before the actual encounter with respondents.

Initially, based on my experiences during the six weeks, I jotted down a number of themes that I anticipated would surface in an analysis of the data. However, rather than relying too heavily on my preconceived framework for gathering and analysing data, I used my *interactions* with the learners to discover and create an analytical framework for understanding and portraying dynamics and interactions.

An important part of this process is the hermeneutic cycle. The process entailed, for instance, that I read a posting, an e-mail, or an answer to one of the questions in the online test in its entirety so as to form an overall impression. I then went back and looked at the pieces in order to analyse them. I identified the main issue addressed in each paragraph or section, and jotted down key words or categories in the margin. More often than not, a whole number of issues were addressed in one posting or set of communications. I then looked at these single instances in isolation and tried to draw meaning from them without necessarily looking for other similar instances.

Afterwards, I related the pieces back to the whole – back and forth from pieces and from the whole to the pieces – over and over again. As Godamer (1976) states, the movement of understanding is 'constantly from the whole to the part and back to the whole'.

This led me repeatedly to alter my understanding of the pieces and the whole. Having established patterns and themes, I looked for relationships between the identified categories. The analysis involved coding the

data into manageable themes, patterns, trends, and interactions. The data was then inspected to find associations. The observations and their interpretations were used to link the observed patterns and trends in the data to existing theoretical frameworks. After having gone through all the different sources, I then verified the main themes as they present themselves in chapter 7. After I had pulled the data apart, I attempted to put it all back together again in a more meaningful way.

The idea of *a hermeneutic circle* refers to the dialect between the understanding of the text as a whole and the interpretation of its parts, in which descriptions are guided by anticipated explanations (Gadamer 1976). As Gadamer (1976) explains:

> It is a circular relationship ... The anticipation of meaning in which the whole is envisaged becomes explicit understanding in that the parts, that are determined by the whole, themselves also determine this whole.

Merriam (1988) suggests seven analytic frameworks for the organization and presentation of case study data:

- the role of participants
- the network analysis of formal and informal exchanges among groups
- historical
- thematic
- resources
- ritual and symbolism
- critical incidents that challenge or reinforce fundamental beliefs, practices, and values

This study incorporates detailed descriptions of the case and its setting in chapter 4. In chapter 5, weekly events are summarised, thus making use of the analytic framework that deals with critical incidents. Chapters 6 and 7 are organised thematically and based on the formal and informal exchanges among the group in combination with all the different data sources identified above.

Ricoeur (1974) suggests that

> Interpretation ... is the work of thought which consists in deciphering the hidden meaning in the apparent meaning, in unfolding the levels of meaning implied in the literal meaning.

The focus of the study was not to come up with universal truths – but to decipher the hidden meaning behind the text that was analysed. In the process, transferable knowledge (instead of generalisations) evolved in terms of patterns that may be compared and contrasted with other

published literature and may inform practice in similar elearning environments.

Quality criteria

Research in the interpretive tradition is typically assessed in terms of trustworthiness criteria that include credibility, transferability, dependability and confirmability, and authenticity criteria that include fairness and ontological, catalytic and tactical authenticity (Guba & Lincoln 1996). Gephart (1999) agrees and similarly lists trustworthiness and authenticity as criteria for assessing interpretivist research.

In quantitative research, *reliability* is usually interpreted as the ability to replicate the original study using the same research instrument and thereby to obtain the same results. Qualitative research is often vulnerable to the idiosyncratic biases of the researcher and can at best be descriptive and interpretive. But there are methods of guarding against these dangers. To ensure rigour, this study will focus on the credibility, transferability, dependability, audibility, confirmability, and authenticity of the research findings.

Credibility may be described as the soundness of the research conclusions, and the production of findings that are convincing and plausible. It asks the following questions: 'Was the study done in such a way that the participant's data were accurately identified or described?' and 'How well do the findings match that which is being observed?'. Credibility therefore means determining the soundness of the study. This could be achieved, for example, by taking the research findings back to participants. A strong engagement with the case, the collection of sufficient data, active observations, member checking, and triangulation of the data sources ensured the credibility of this study (Merriam 2002; Hull 1997).

Generalisability may be defined as the extension of research findings and conclusions from a study conducted on a sample population to the population at large. Generalisability, from a rigidly positivistic point of view, is not available to teacher-researchers because teaching is not a narrowly circumscribed technical enterprise that can be carried out by identifying sets of behaviours that can be reproduced in any classroom context. Snow and Anderson (in Feagin, Orum & Sjoberg 1991) state:

> From the standpoint of conventional, positivistic social science, with its emphasis on the development of abstract laws that facilitate prediction and control, the production of generalisable findings is its most basic activity.

In this study, I preferred to seek transferability rather than generalisability. Whereas generalisability usually applies only to certain types of quantitative methods, transferability may apply in varying degrees to most types of research. Unlike generalisability, transferability does not involve broad claims. Instead, it invites readers of research to make connections between the elements of a study and their own experience.

Transferability refers to the fact that the researcher is responsible for providing comprehensive, detailed and specific descriptions in order to obtain enough information so that it can be useful to the reader (Lincoln & Guba 1985; Terre Blanche & Durrheim 1999). Detailed, rich and layered descriptions provide sufficient information to enable readers to judge the possibility of any applicability of the findings to their own settings (Seale 2002). Readers thus make the transfer by making connections between elements in the study and their own experience. Hull (1997), and James and Mulcahy (1999) add that the description must also include convincing analysis or interpretation. Transferability asks whether the findings can be applied to another setting or grouping of people who experience the same phenomenon.

I aimed to produce trustworthy and transferable results, rather than to ensure validity and reliability in the traditional sense of the words. Because I intended the results of this study to be transferable to other contexts, I have kept a detailed account of the environment that surrounded the research, and I have included a rich description of that environment in the thesis (see chapter 4). Armed with detailed information about the study itself, readers of this research can confidently transfer the findings of this study to other situations. Instead of the discovery of a universal generalisable truth, the focus is therefore on exploration and a qualitative description of the dynamics in a small group of students who participated in a module that was presented by means of a game metaphor.

Dependability is concerned with the provision of detailed descriptions of all the components of the research process, including how the research was designed, and how the data was mined and analysed. It asks the following question: 'Are the results consistent with the data collected?' The research should aim to convince the reader that the findings are indeed trustworthy. Dependability, in contrast to reliability, is that which refers to the degree to which the research is repeatable. When one uses an interpretivist research approach, it is assumed that the reality that is investigated is not constant and static. It thus cannot be expected that the same results will be found repeatedly. On the contrary, what *is* expected is that different people will change or behave differently in different contexts.

However, since this study provides detailed in-depth descriptions of not only the design, development and implementation of the module, but also of the research process, the reader will be judge for himself or herself whether the findings are in line with the material that was collected.

Audibility is related to the consistency of qualitative findings and is therefore comparable to reliability in quantitative research. Audibility asks: 'Are there a sufficient number of accounts of the data and the analysis?' This is achieved by means of an 'audit trail' that includes documentation of the methods, procedures, the decisions made, the population, and explanation of the categories that are used (Hull 1997; Merriam 2002). Audibility is thus accomplished when another researcher can follow the decision trail of the researcher. It is argued that the rigour of the study may be established if the reader is able to audit the events, influences, and actions of the researcher (Koch 1994). Although an exact replicability of findings is obviously impossible, the data sets obtained, and their interpretation by other researchers who study the same community at a similar time, should be largely comparable (James and Mulcahy 1999). This study aims to document the various components involved in as much detail as possible so that other researchers will be able to follow the trail.

Confirmability refers to neutrality and objectivity, and is a qualitative concept corresponding to the concept of objectivity in quantitative research. It refers to the degree to which research results can be confirmed by other researchers. The confirmability of findings is based on the researcher's critical self-reflection with regard to his/her assumptions, worldviews, biases, theoretical orientations, values, and epistemological stances (Merriam 2002). Confirmability occurs when credibility, transferability, and audibility have been established.

A limitation to the observational method of inquiry is the effect that the researcher's presence during the event, and/or personal biases, may have on the recording and analysis of the online learning experience. The personal integrity, sensitivity, and possible prejudices and biases of the researcher needed to be taken into consideration in this study. The possibility that personal biases could have crept into how the research was conducted, into the selection of the alternative research methods used, and into the preparation of surveys and questionnaires was always there. Even though multiple types of triangulation were used in this study, my closeness to the *CyberSurfiver* module, in terms of fulfilling the multiple roles of designer, developer, facilitator and researcher, made it extremely difficult for me to identify and exclude all my assumed personal biases. I cannot therefore claim to have been totally

impartial at all times (even if that were humanly possible) because I could not detach my findings from my own personal assumptions. But in spite of this, all possible measures have been taken to ensure that the research findings are nonetheless confirmable. Thus, for example, the fact that this study used a team of observers to do carry out the observations, guarded against the more obvious symptoms of bias. The members of the team compared and crosschecked their findings in regular sessions with one another. This practice made it possible to evaluate in consultation with others, to confirm data, and therefore to satisfy one of the most critical requirements of social science research.

Authenticity acknowledges that research findings represent *an impermanent agreement* about what is considered to be true. Researchers should demonstrate that they have fairly represented a range of different realities, and help the reader to develop a more sophisticated understanding of the case being studied an appreciation of the viewpoints of others (Seale 2002). Member-checking, peer review, and respondent analysis, enhanced the authenticity of this study.

Atkinson, in Altheide and Johnson (1998), argues that there is no *perfect* theoretical or epistemological foundation, no *perfect* method for data collection, and no *perfect* or totally transparent modes of representation. But all of the qualities of rigorous research can be incorporated in a case study if one combines all of the strategies that enhance the trustworthiness of the study.

Crystallisation and triangulation

Historically, triangulation as a method of validation has been discussed as an important part of the research design process (Janesick 2000). More recently, however, scholars such as Richardson (1994) and Janesick (2000) refer instead to 'crystallisation' as the illuminating and clarifying lens through which qualitative research designs and their components should be viewed. According to Richardson (1994), crystallisation recognises the many possible facets of any given approach to the social world. She explains the triangle of triangulation by using the metaphor of a crystal, and states that the crystal

> combines symmetry and substance with an infinite variety of shapes, substances, transmutations, multidimensionalities, and angles of approach. Crystals grow, change, and alter, but are not amorphous (Richardson 1994).

Denzin and Lincoln (2000) assert that crystals are prisms that reflect and refract, creating

ever-changing images and pictures of reality, and she deconstructs the traditional concept of validity on the grounds that there is no single triangulated truth.

In this study, triangulation is considered to be a process that uses multiple perceptions to clarify meanings and to verify the repeatability of an observation or interpretation (Stake, 2000). Triangulation served the purpose of reducing the likelihood of misinterpretations and of clarifying the meaning – even though it is acknowledged that no single truth or unquestionable certainty may be found.

A single complex intervention such as *CyberSurfiver* ran over a period of six weeks and involved hundreds of discrete designer, facilitator and researcher decisions in an attempt to promote innovative practice. It is thus difficult to decipher direct causality. The dependability of the findings can be promoted by means of triangulation from multiple data sources and a repetition of analysis across cycles of performance.

The strategy of triangulation permits the researcher to assemble complementary and overlapping measures of the same phenomena. The observers in a case study usually have a variety of data sources at their disposal. These sources can be called upon to assess the nature of particular events. Sources may include diaries, personal interviews, and correspondence. All of these are utilised to crosscheck and validate observations. Denzin (1989) calls this 'the triangulation of sources'. Stake (1995) argues that the protocols that are used to ensure accuracy and alternative explanations are called triangulation.

Case studies are regarded as a triangulated research strategy. The need for triangulation arises from the ethical need to confirm the soundness of the processes. This can be achieved in case studies by using multiple sources of data (Yin 1984). Snow and Anderson, in Feagin, Orum and Sjoberg (1991), assert that triangulation could occur with data, investigators, theories, and even methodologies.

Denzin (1984) identified four types of triangulation. They are:

- *data source triangulation.* This happens when the researcher expects data to remain the same in different contexts involving time, spaces and people.
- *investigator triangulation.* This happens when multiple, rather than single observers examine the same phenomenon.
- *theory triangulation.* This happens when investigators with different viewpoints and more than one theoretical scheme interpret the same results.

- *methodological triangulation.* This happens when one approach is followed by another investigator so as to increase confidence in the interpretation.

The argument is that social reality is too complex and multifaceted to be adequately grasped by any single method, source, or investigator. Rather than debate the merits of one against the other, triangulation allows a combination of multiple strategies to complement and supplement each other's weaknesses.

In *CyberSurfiver*, multiple triangulations were thus established when I brought together, in one investigation, multiple observers, theoretical perspectives, sources of data, and methodologies. In combining these, I tried to overcome the weaknesses or intrinsic biases and the problems that come from single method, single-observer, and single-theory studies. Case studies need to provide multiple perspectives and to allow readers judge and construct their own reality (Stake 1995). In *CyberSurfiver*, the analysis was triangulated in terms of methodologies, theories, observers, and data sources (Silverman 1996; Stake 1995).

Although qualitative research has been criticised for lacking rigour in terms of the standards of quantitative research, rigour is not attainable by means of quantification. In the same way, quantitative research is not synonymous with impartiality and qualitative research is not synonymous with bias and prejudice. Both research approaches have implicit within them varying degrees of subjectivity because both are influenced by *human* decisions. Each method must be judged against the standard of what it claims to accomplish (Hemingway 2001).

Closure

The purpose of this chapter was to present and discuss the research design that was used to address the questions that guide this study. The chapter started out by highlighting the qualitative interpretivist paradigm in which the study took place. In the process, it touched on the design of the *CyberSurfiver* module, design experiments and the ADDIE instructional systems design model. The chapter then highlighted the design of the research study, the case study as the selection of what is to be studied and as a research method, and the influences exerted by ethnographical and hermeneutical approaches in the research. In addition, the data collection methods and mode of analysis were discussed. The chapter concluded by showing how trustworthiness and authenticity were used as quality criteria.

The researcher will describe the details of the case study on which this research is based in

chapter 4 in answer to the first sub-question which is:

> *How can a web-based module be designed so that it closely resembles the game structure of the Survivor© reality show?*

Introduction

In this chapter, I will describe the design of the *CyberSurfiver* module on which this research is based. I will explain 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 is therefore described below. This description situates the case within the online learning environment.

The case study: *CyberSurfiver*

The case study upon which this thesis is based is the facilitation of a particular module that is presented as part of a two-year tutored Masters degree in Computer Integrated Education at the University of Pretoria. The learners who enrolled for this module are all working adults who have completed studies in Education and who range in age from between 23 and 62. They all intend to complete the degree on a part-time basis while they continue to work full time. The module on which this study is based is entitled e*Learning*, and it was presented over the period of six weeks between 18 July 2002 and 29 August 2002. This module was one of a number of electives that can be done to complete the degree.

The module was presented almost entirely online – the only exceptions being an introductory contact session at the beginning of the course, an emergency tribal council after the first chaotic week, and a closure session right at the end. From a pedagogical point of view, one might say that the module was both learner-centred and firmly grounded in a constructivist philosophy, even though a number of instructivist elements were included wherever and whenever this was considered to be necessary. The presentation of the module simulated the spirit and atmosphere of *Survivor*© – an award-winning reality series that has been shown on national television.

Apart from differences in location (which, in the television programme, is usually an exotic site in some remote, often inhospitable but beautiful part of the Amazon, Africa or some country such as Thailand, and which, in this study, was Cyberspace), the researcher (1) applied similar rules to those that were applied in the television reality programme, and (2) arranged for analogous events to take place in Cyberspace.

One other difference is that we called our game *'CyberSurfiver'*, with the emphasis on the 'surf' part that relates to the activity of browsing the Web. While the reality show offers the final survivor a dazzling cash prize of $ 1 000 000, *CyberSurfiver* managed to offer a rather more humble but nevertheless very appealing weekend away for the winning *CyberSurfiver*.

As the module was experienced as

> *six weeks of real torture*
> (Anonymous survey response)

and many of the learners spent a considerable number of hours behind their computers in order to complete their challenging assignments, they frequently experienced conflict at home with family members who felt neglected and abused because of the hours that they had to devote to the project. As one learner put it:

> *My wife is talking about divorcing me (money for my child's clothes used for the* online *discussions).*

The weekend away for a family of six at a local resort was therefore perceived as a most desirable incentive.

The other significant incentive was the marks that were awarded for the module and the fact that the module earned the learners credits as he or she worked towards obtaining the degree.

All interactions for the duration of the module had to be carried out online (on the 'CyberIsland'), and interpersonal telephone calls or any form of face-to-face contact between learners were strongly discouraged. We do know, though, that learners who experienced technical difficulties in, say, ftp-ing their web sites to the server on campus, got together with more experienced learners on a number of Saturday mornings in order to be able to meet deadlines and achieve milestones. It is thus fair to say that most interactions took place online, even if this was not the only type of contact that took place. In addition, learners admitted to having had occasional face-to-face contacts and discussions of some kind behind the scenes, even though this was not officially allowed.

Participant instructions for the weekly assignments had to be accessed via the Internet. All the interactions among tribal members themselves, or between tribal members and the facilitator of the course, took place through the medium of a number of pre-selected web-based communication tools such as *Yahoo Groups, Yahoo Messenger, NetMeeting, WebCT,* and *InterWise*. These tools were selected because they provided learners with a wide range of experiences in the use of a variety of applications. Learners all obtained a useful representative knowledge of what the Internet has to offer in terms of synchronous and asynchronous communication from their use of these tools. In addition, their use of these forms of communication presented learners with opportunities to evaluate the different functionalities that are offered by both expensive commercial learning management systems – and those applications that are available at no charge on the Internet.

One cost-effective application, namely *Yahoo Groups,* was used as 'base camp' throughout the duration of the module. This application required all learners to get a *Yahoo* ID, which is available at no cost. The drawback of this service is the fact that it is heavily supported (financed) by paid advertisements that are attached to all messages. This renders it less than ideal as an environment in which to learn. During the first week in which the module was presented, this service was the sole available medium of communication. While, from the second week onwards, other tools were introduced and integrated on a regular basis, it soon became clear that *Yahoo Groups* were going to be the more formal medium of communication, particularly if the intended message was intended for the entire group. One might note at this point that *Yahoo Messenger* proved to be a popular medium for making interpersonal contacts – even across tribal boundaries.

For this module, the 24 learners were divided into 4 groups (tribes), each of which consisted of 6 learners (tribal members) – all of whom possessed widely differing levels of computer and web literacy skills. It was at the introductory meeting that the first tribal task was given to the tribe. The task was to come up with an original name and slogan for the whole tribe.

Tribal members were required to complete, on a weekly basis, a number of collaborative (tribal) and individual assignments. For the tribal assignments, learners were required to collaborate and negotiate online by using the web-based mediums available to them. All assignments also had to be 'handed in' electronically. One example of such a tribal assignment follows below (See Table 9):

Table 9: Example of a Tribal Assignment

Tribal Assignment 4

- In your tribes, **create a clickable concept map** of the most important issues/concepts related to teaching and learning via the Internet. In this assignment, your tribe should demonstrate that you truly understand the intricacies involved in elearning.

  I would like to see a holistic view of elearning when looking at your map. Please note that the idea is not to link the map to keywords only, but rather to extensive notes on each of the topic. Think big and read widely!

- **Add this map to your tribal website** and have it up and running by 17:30, Wednesday 21 August 2002.

Individual assignments varied from those that encouraged learners to improve their technical skills, to those that were more scholarly in nature. An example of each follows below (See Table 10):

Table 10: Example of Individual Assignments

Individual Assignment 4 *(Technical Skill)*

This week you should add the following feature to your personal web site:

- a sound file (approximately 30 seconds should do it) in which you give us your impressions of the first week on the CyberIsland. Include at least one positive and one negative comment.

Individual Assignment 6 *(Scholarly activity)*

Compile a report (600 words maximum) on ONE of the following topics:

- The role of the online facilitator as contrasted to that of the traditional face-to-face teacher.
- The strengths and weaknesses of the Web in an educational environment.

Mail your report in HTML format to the Webmaster of your tribal site with a request to have it linked from there. This link must be available by 17:30, Wednesday 7 August 2002.

In the spirit of the original *Survivor*© game, Immunity and Reward Challenges were also posted on a regular basis. The facilitator made use of these challenges to make learners aware of a number of related and important issues. For instance, at one point it became clear to me that the learners had no idea what an IP address was. This problem area was then formulated into a question and posted as a Reward Challenge (See Table 11).

Table 11: Example of a Reward Challenge

Reward Challenge

Who can tell us what an IP address is? How can I find out what my IP address is? The first correct response will get the reward!

As this module was presented in asynchronous mode, there were quite a number of legitimate objections to the fact that the award was presented to the first correct response. While some of the learners had access to their networked computers only from home, others could only connect to the Web from their places of work. This meant that, no matter when – in any 24-hour period – a reward challenge was posted, some learners were certain to read about the challenge before others could do so.

The reward was virtual by nature and came in the format of a picture attached to a bulletin board message. The pictures below depict an example of what these rewards were like (See Figure 4):

Figure 4: Examples of the typical rewards in the Reward Challenges

The way in which the game worked was that members would be voted off on a weekly basis until only one final survivor (our *CyberSurfiver*) remained. Thus, at the end of each week's activities, the tribes had to vote one member of the team off on the basis of a number of predetermined criteria. This member then joined the other evicted learners in a separate tribe that was called Tribe 5. Even though they were out of the running for the Grand Prize, all members of Tribe 5 were nevertheless required to complete all the tribal and individual tasks that were given to those who remained in the game.

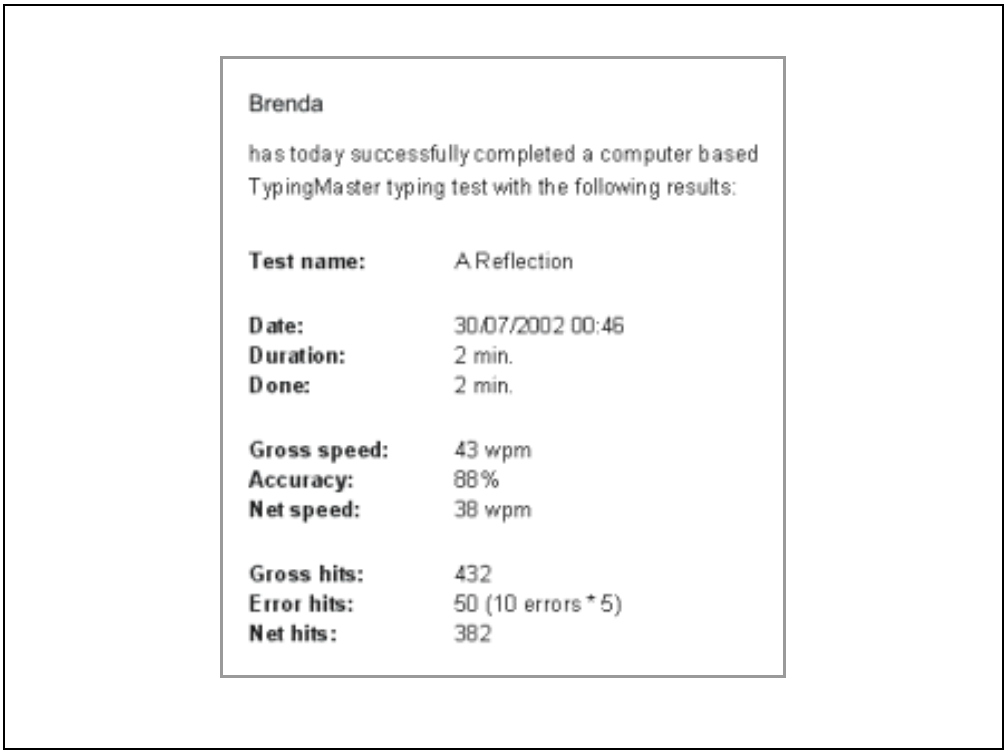
The only sure way not to be evicted was to win immunity for the week. Just as with the Reward Challenges, Immunity Challenges were also posted on a weekly basis and included tasks whose relevance to the purpose of the module was more indirect.

One of the Immunity Challenges, for example, aimed to assess the typing speed of learners in the course. I, as the facilitator,

needed this information because I planned to set up an online test that included a large number of paragraph-type questions which required learners to be able to type in large amounts of text. I obviously needed to take into account the typing ability of the students because that variable would influence the amount of time that I would allocate to the test.

The learners were therefore asked to download from the Web a typing tutor that included a typing test utility. Learners then had to type a paragraph, obtain their scores, make screen dumps of these scores, and attach them to a bulletin board message for all to see. The figure below shows the 'evidence' of the score of one of the participants (see Figure 5).

Figure 5: Example of Immunity Challenge 'Evidence



As in the television show, tribes were required to vote off one member each week. In order to process these weekly votes, a web-based voting station was created with PHP. Learners gained access to the station by utilising a username and a password. It therefore became possible to limit each learner to only one vote – and a vote for only one person. The voting station only allowed learners to vote for the members of their own tribes and they were not allowed to vote for themselves. The voting station usually closed on a Thursday evening at midnight – after which time the person with the most votes was automatically transferred to Tribe 5. If more than one person got the

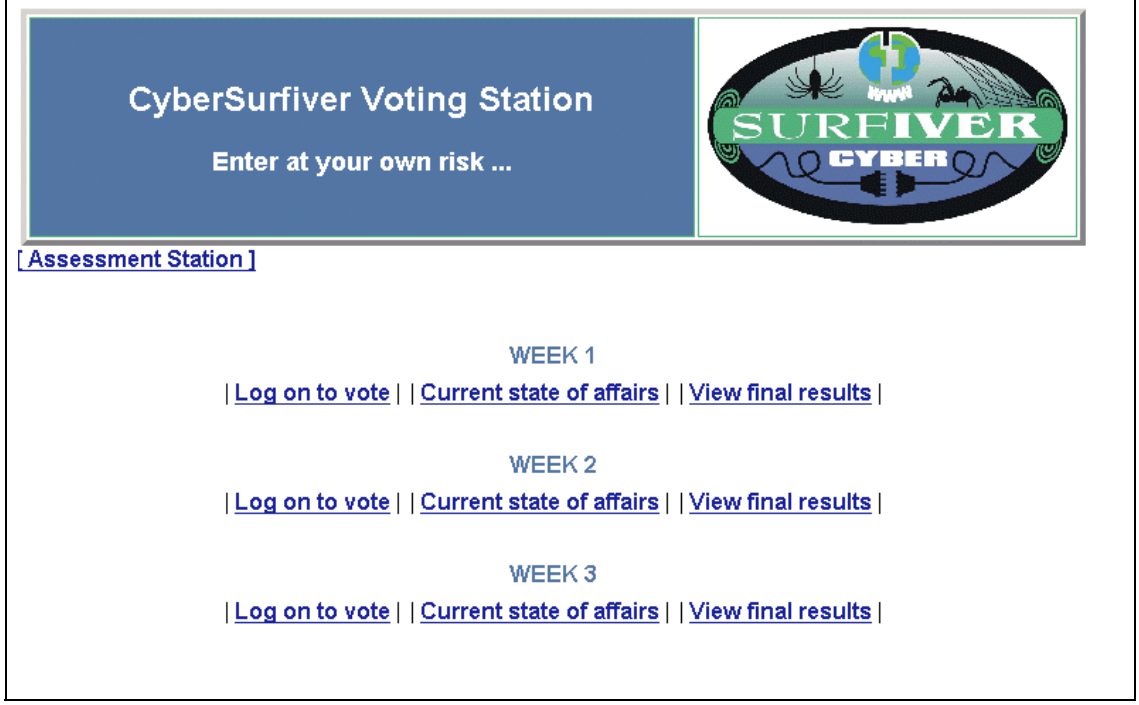
same number of votes, or if no one got any votes, the computer randomly selected a person to be voted off.

Members of Tribe 5 did not have to vote, as they were no longer eligible for the Grand Prize. However, all learners became part of the Jury who, in the final week, had the opportunity to choose the winner of the Grand Prize from the remaining 'Surfivers'.

At one point, the number of active members in the tribes began to dwindle because more than half of the initial team members had either been voted off or had fallen out of the course for various reasons. In line with similar surprises in the reality show, I introduced a new tribal division that elicited high levels of stress in some while elevating levels of satisfaction in others. This action entailed a shuffling of the tribes so as to combine into two teams (Tribe 6 and 7 – consisting of five and four members respectively) those members who were still in the running for the Grand Prize.

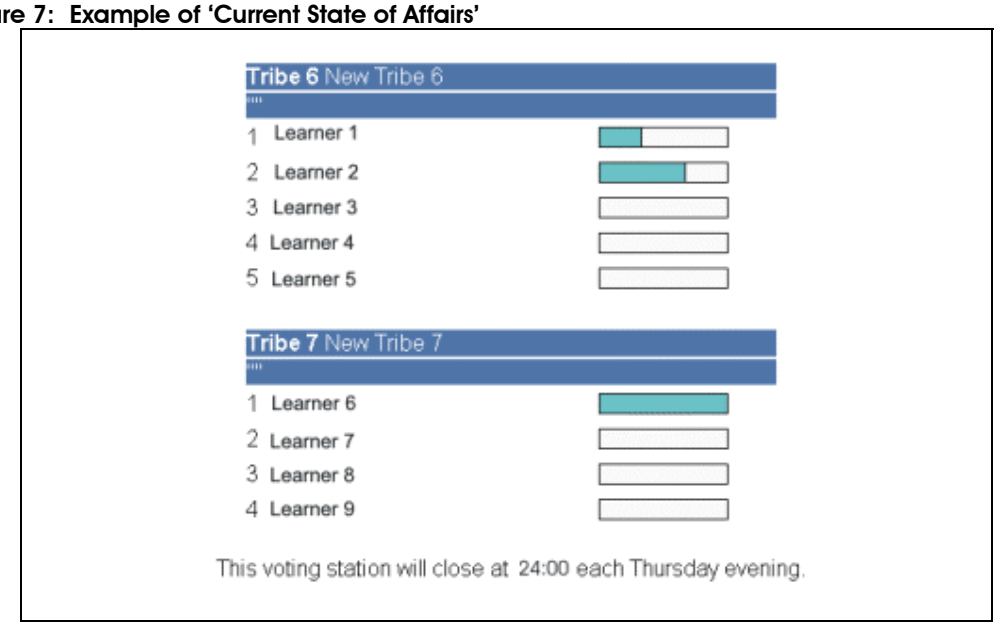
At this stage, a number of those who had been voted off expressed their dissatisfaction with Tribe 5's inability to obtain active participation from all its (evicted) members. They then started a new tribe (Tribe 8) that turned out to be highly functional after an additional shuffle had taken place. Figure 6 shows the interface of the Voting Station.

Figure 6: Voting Station Interface



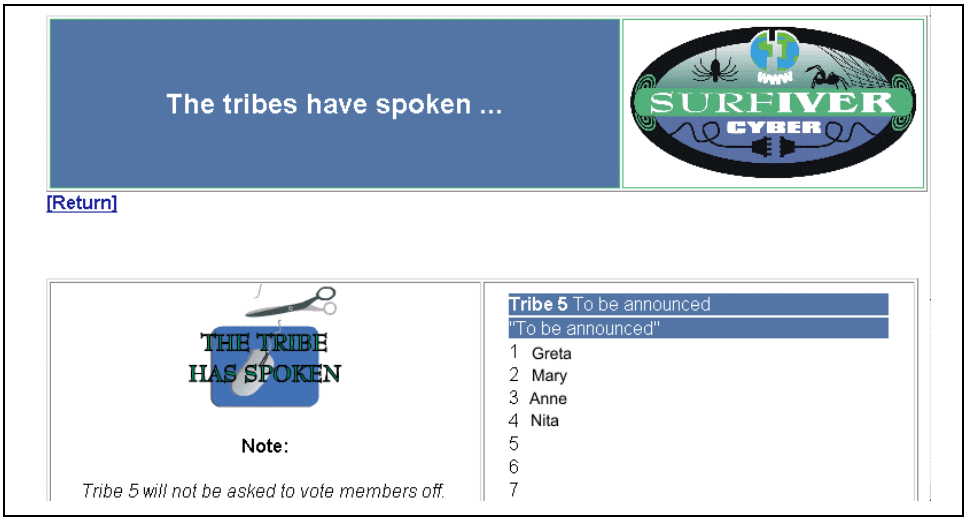
The learners could log on to vote (and they could only vote once), but they could also see the current state of affairs at any time during the week. This link took them to a page where the names of all tribal members were displayed and where they could see the number of votes that had been cast against the various members (see Figure 7).

Figure 7: Example of 'Current State of Affairs'



Once the voting station had closed at midnight on a Thursday evening, the members who were voted off, were automatically moved into their new tribe (see Figure 8).

Figure 8: Example of 'View Final Results'

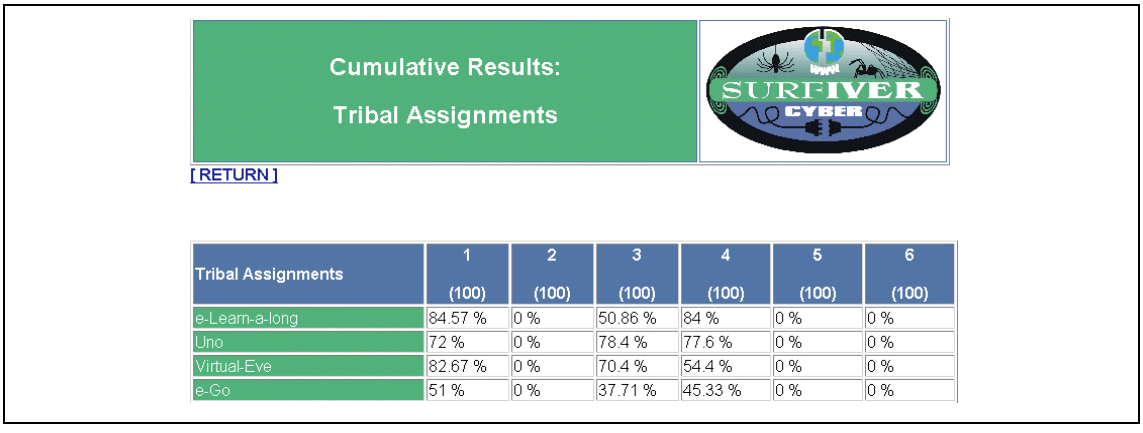


Once the names of the evicted tribal members had been moved to Tribe 5, an animation would appear. The purpose of this was to recreate with as much verisimilitude as possible the features of the reality show. In *Survivor*©, the torch of the person who has been voted off is ceremoniously extinguished while the presenter states dramatically that the tribe has spoken. On CyberIsland, this same effect was created by an animation that symbolised a dangling computer mouse that is cut loose with a pair of scissors, accompanied by the statement: *'The tribe has spoken... '* (see Figure 9).

Figure 9: Example of the CyberIsland 'Torch' Before and After the Votes Have Been Tallied

As higher order thinking and collaboration were skills that were deemed a priority in the module, learners were also required to carry out peer evaluation of the other tribe's collaborative assignments. Due dates for the assignments were usually set for the Wednesday evening. After the deadline had passed, learners were required to spend time evaluating the collaborative work performed by other tribes. They then had to log onto the web-based assessment station, which was also developed in PHP, and assign a mark to each of the other tribes. They did not have access their own tribe's marks and could only vote once for each of the other tribes (See Figure 10).

Figure 10: Example of the Peer Assessment of Tribal Assignments



Tribal Assignments	1 (100)	2 (100)	3 (100)	4 (100)	5 (100)	6 (100)
e-Learn-a-long	84.57 %	0 %	50.86 %	84 %	0 %	0 %
Uno	72 %	0 %	78.4 %	77.6 %	0 %	0 %
Virtual-Eve	82.67 %	0 %	70.4 %	54.4 %	0 %	0 %
e-Go	51 %	0 %	37.71 %	45.33 %	0 %	0 %

Furthermore, the learners were also required to evaluate their tribal member's collaborative behaviour. Here they had to assess the other members based on their availability, level of participation and the quality and quantity of their contributions (See Figure 11).

Figure 11: Peer Assessment Criteria for Collaborative Behaviour

Collaborative Behaviour
Tribal Members

Criteria	Maximum score	Your assessment of the individuals in your tribe				
Availability	5					
Level of participation	5					
Quality of inputs	5					
Quantity of inputs	5					
Team spirit	5					
Total	**25**					

Closure

This chapter explained the nature of the game and the manner in which it was played as part of the eLearning module that forms the basis of the case study under consideration. As the *Survivor*© metaphor was the basis on which the entire module was presented, the module was designed to reflect the nature of the reality show as closely as possible. The game elements that were simulated included the group constitution, the isolation on the 'virtual' island, the tribal and individual assignments, the Reward and Immunity Challenges, the shuffling of teams half way through the module, the voting procedures and the Grand Prize waiting at the end of the module for the sole remaining '*CyberSurfiver*'.

The next chapter will outline the highlights of the various weeks, and will deal with the above-mentioned range of game elements and their impact on the complexities of the group's functioning.

Introduction

Chapter 5 focuses 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 begins with a description of areas of special interest as these became evident from week to week. Each of these summaries is followed by a commentary on the significant happenings of each particular week.

The following question guided reflection in this thesis:

> *How could a web-based module that was inspired by the ideas from the reality television show Survivor© affect the various types of interaction and the dynamics between the adult learners?*

To make the answers to this question more explicit, the researcher formulated two sub-questions:

- *How did the reality game elements affect the group's functioning?*
- *How did the above-mentioned elements affect the complexities of the dynamics of the group?*

These sub-questions will be addressed in the chapters 6 and 7. In this chapter, though, I would like to take the reader on a journey through the 6 weeks as they progressed, in order to get a feel for the dynamics at play in this module.

Prelude

It was in discussions with the course creator and monitor, Professor Johannes Cronjé, that I agreed to approach the module on elearning on the basis of a metaphorical recreation in cyber space of the television reality show *Survivor*©. We agreed that this particular metaphor reflected the ethos of the MEd programme with great accuracy because the master's course had acquired a reputation over the years for being a demanding course in which learners were plunged into the deep end and in which they were required to rely heavily on collaboration and peer support.

Initially I jotted down some of my own ideas, and analysed the *Survivor*© game as it was presented on television. I then structured the various elements of the game to reflect the particular outcomes of the module. These preliminary notes went through a number of cycles of improvement and refinement before they eventually evolved into the module as it was presented.

Professor Cronjé had already been using *Yahoo Groups* as a primary communication tool between himself and learners in earlier modules, and it was decided that we should

make use of this facility initially to act as the hub for the elearning module. Prior to engaging in this research, I had been part of an international research team that had investigated the educational potential of a number of free Internet applications, products and services. Because the group of which I was a part had examined *Yahoo Groups* and *Yahoo Messenger* as part of its brief, I was familiar with how they worked and with their potential in the educational environment. This 'prior knowledge' turned out to have both positive and negative spin-offs.

Because I had thoroughly examined all the functions of *Yahoo Groups* as a member of that earlier research group, I was excited by an opportunity to use their software in an authentic educational setting even though the amount of advertising (by means of which the site is maintained and financed as a free service) was a highly distracting feature. Because I was already familiar with the various tools and because I planned to use them in a new and constructive way, my sense of what was traditionally possible on the Internet was significantly expanded. I envisaged, for example, how I would put up the assignments in the 'Files' functionality, how learners would use the 'Photos' section to introduce themselves, and how we could make use of the 'Links' section to share interesting and relevant Internet addresses with each other.

It did not, however, occur to me to verify whether or not all the participants were actually using the web-based version of *Yahoo Groups*. I had simply assumed that all the learners would access the discussions in this way. What I did not realise was that the majority of the learners would opt to receive their *Yahoo Group* messages in the e-mail form that is automatically forwarded by *Yahoo* to private e-mail addresses. This option is one that users can select when they initially sign up for *Yahoo*: they can choose either to have the mail forwarded to their e-mail addresses (push), or they can also obtain access to the web-based environment for the group, which includes quite a number of additional features (pull). This oversight of my part precipitated disastrous events within the first week of *CyberSurfiver* because there are vast differences between these two ways of access.

Summaries of Weeks 1 – 6

In this section, the main activities of the module for each week of study will be described.

Week 1: 18 – 25 July 2002

Week 1 began with a short face-to-face introductory session during which I introduced myself and explained how the module was going to be presented through the medium of the *Survivor*© metaphor. I

also warned learners of the risks involved in playing a game such as *CyberSurfiver*, and told them about the research project that we had planned.

Twenty-four people attended this introductory session. Since I had not been involved with this group before the eLearning module, I did not know any of their names or faces. It was therefore difficult for me to know who in the audience were legitimate students and who those were who had other interests in the module (this latter group being those who – for whatever reason – had no intention of enrolling formally at that stage).

I therefore went ahead and divided the people in the room into 4 tribes of 6 members each. The learners were asked to locate themselves on an imaginary straight line (continuum), one end of which represented a thorough working knowledge of the Internet, while the other end represented complete ignorance and unfamiliarity of the Internet. They were then numbered in sets of 1 to 4. After that we grouped all the ones, and then all the twos, and so on until the last person, together. The newly formed tribes were then asked to come up with a unique tribal name and slogan with which to identify themselves.

It was at this time that I also directed them to *Yahoo Groups* where, earlier the day, I had posted two documents to the 'Files' section. One was an introduction to the course, and the other contained the individual and tribal assignments for that first week.

Unaware of the fact that the learners were all excited by the prospect of playing the game and that they were therefore not paying sufficient attention to the fact that the two documents they needed to download were available in *Yahoo Groups*, I left the contact session that evening, fully expecting the first buzz of activity early on the next day (Friday, 19 July 2002). I anticipated that learners would begin to plan their activities with a sense of urgency after they had accessed the assignment document and realized that they had precious little time in which to complete rather a lot of work.

This anticipated frenzy of activity did not happen – neither on the Friday, nor on the Saturday, nor on the Sunday that followed. The first real signs of activity began to appear on Monday as learners began to wonder what exactly they were suppose to be doing. By that time I was worried, faced as I was with a number of unanswered questions such as:

> *What exactly has gone wrong? Why did have they not responded? Did they not grasp the information about the assignments? Have they found the assignment – but perhaps not understand what to do? Are*

they all perhaps working quietly but frantically behind the scenes?

On that Saturday afternoon, I posted my first message in the hope of nudging them along:

I hope that you are all by now well on your way with both your individual and your tribal assignments.

I then went ahead, confirmed the names and slogans of the 4 tribes, and repeated the grouping of the various members of the tribes.

Tribe 1: Uno

Slogan: Uno, we are number 1!

Members: Roleen, Brian, Wendy, Catherine, Gabrielle, Larissa

Although I felt decidedly uneasy about the lack of activity, I nonetheless tried to remain true to the game by adding an undertone of suspense by writing at the bottom of the list:

Tribe 5: To be seen...

A message giving the learners a couple of pointers for Assignments 1 and 2 followed soon afterwards. I also requested the tribes each to appoint a spokesperson for the week. I was still under the impression that the learners had all accessed the assignments, and was hoping that they were quietly communicating behind the scenes in order to complete them in time.

Week 1's Immunity Challenge in which learners had to play an online game and post evidence of their highest score to *Yahoo Groups* were posted later on that Saturday afternoon (14:10). A poll that inquired whether learners had access to the Internet from home or from work, was posted very early on Sunday morning (00:24). One of the purposes of the poll was to ascertain whether learners were going to be able to work together synchronously. It was also intended to serve as an explanatory indicator that might account for the absence of activity online over the weekend. Only if hardly anyone had access to a personal computer at home could the weekend's prolonged (and by now ominous) silence be adequately explained.

The poll asked the following question:

I have access to a networked computer (one that is connected to the Internet) ...

- *at home*
- *at work*
- *both at home and at work*
- *neither at home nor at work*

On the evening of Saturday, 20 July 2002, the first lonely voice was at last 'heard'. One of the learners who had been unable to attend the contact session, wanted to know

to which tribe he had been allocated. I responded soon afterwards by posting the name, slogan, and names of the members of his tribe. I also got the opportunity to restate where the learners could find the tribal and individual assignments for the week. On the following afternoon (at 14:00), another learner in his tribe, Emma, also responded and told him where he belonged. I was relieved to know that at least 2 people had by now accessed their e-mails and that I could deduce that some activity was taking place.

It was, however, not until the next day, Monday 22 July, that the majority of learners, slowly but surely, started to realise that there was more to the assignments than met the eye. When they started asking questions, I found myself wondering whether they had misunderstood my instructions, or whether they simply had not yet gone to the site to download them.

To my question (*Yahoo Groups*, Monday 22 July 2002, 20:31):

> *How are the tribal assignments coming along?*

Brenda (*Yahoo Groups*, Monday 22 July 2002, 22:16) responded with:

> *What tribal assignments?*

A couple of minutes later (22:31), Dawid responded with:

> *These are in the PDF docs you should have received a few days ago!*

I was encouraged to know that Dawid, at least, had found the assignments and was now encouraging the others to go and find them as well.

By the Monday evening, I ventured out again and asked how the tribal assignment was coming along. By the Tuesday, 23 July 2002, full-blown chaos has erupted on our CyberIsland. Those learners who had actually found the assignments and the introduction, realised what was involved. They had consequently panicked and had urgently tried to contact the other members of their respective tribes.

Late on Monday evening 22 July (23:17), Dan wrote:

> *I think we need to get cracking asap!* [snip] *I don't mind who's the leader, we just need to get going.*

By Tuesday afternoon, 23 July 16:34, Geronimo responded and addressed the members of his tribe:

> *I URGENTLY need all your e-mail addresses! Please let me have it!*

By Wednesday morning, 24 July, some learners had still not accessed the web or

their e-mails. This created very high stress levels in those tribal members who were already onboard and who were frantically busy with the assignments. Lisandra (8:59) wrote:

> *Todd, Madeline and BA:*
> *We haven't heard anything from you guys. Are you experiencing some problems? I will appreciate it if you can send us your e-mail addresses so that we can get going with our web page.*

As many of the learners had not yet understood the nature of the module, they were not active online and did not log on regularly as they had been requested to do in the initial contact session. This frustrated those learners who realised that the deadline was looming and that they had not yet made any progress whatsoever.

It was only after Ted had replied to my e-mail (the one that once again explained where learners were suppose to go to find the assignments that were posted the previous week) that it dawned on me that many learners had initially only registered for the e-mail functionality of *Yahoo Groups*.

My message read:

> *The assignments are all listed in the .pdf file that was uploaded to this site (see the link in the frame on the left hand side of this site) last Thursday.*

Ted responded (*Yahoo Groups*, Tuesday 23 July 2002, 16:47):

> *Your e-mail message on my screen does not have a frame on the left side, nevermind a link. Furthermore I cannot access E-Learn2002 from my present Yahoo ID!*

Only then did I realise that many of the learners did not even know that a web-based interface was available for the module and had thus never even visited it. Only after further investigation did I find out that *Yahoo Groups* presented members with a choice of registering for e-mail access only (in which case any mail to the group would be forwarded to an e-mail address of their choice), or to register for access to the web-based version of the group as well.

As it turned out, many of the learners were unaware of the second option and had thus never realised that the notes and assignments were posted there. They were in fact waiting and expecting the information to appear in an e-mail message from myself!

By then, it had become clear to me that the learners were not going to be able to complete the assignments in time for the stated 25 July 2002 deadline. The level of

panic and disorganisation were escalating to an unacceptably high level. Even though it is often argued that a certain amount of stress and pressure can increase productivity and maximise learning, the situation we had there was both destructive and unhelpful. Most studies show that high levels of anxiety decrease the storage and processing capacity of working memory and impede the ability to make inferences (Darke, 1988a; Darke, 1988b).

As one student (Brenda, *Yahoo Groups*, Monday, 22 July 2002, 22:16) put it:

> *Am I the only dof* [dense] *one? This is a nightmare*.

Dan (22:31) responded soon afterwards:

> *That's the point!*

Conyne (2003) states that every classroom group has a developmental life span, similar to that of any other organism. He states that students, in the initial phase of group formation,

> can be expected to look for direction, to become oriented, and to search for an increasing degree of security and trust.

This certainly was true of the Surfiver tribes. The majority of the learners spent the first couple of days trying to figure out what was expected of them, where they could find the relevant information, and how they could get a grip on the game approach to their learning.

However, the chaos that had erupted had the potential to become completely destructive and to negatively affect the intended growth in learning. One after the other, requests for an extension of the deadline began to stream into my mailbox.

To soothe the 'cyber trauma' that most of the learners were experiencing, I decided to call an emergency face-to-face tribal council to

- explain once more how the game worked
- discuss both my expectations and those of the learners
- respond to any urgent questions or comments that they might have
- lay down a few ground rules for the coming weeks.

I requested the lecturer, who was teaching the learners on a face-to-face basis on Thursday evenings, to give me some time out of his contact session to debrief the learners on the happenings of the first week. Permission to spend some time with the learners was granted.

Some comments from learners by the end of week 1 are listed here. Jasmine (sound

clip on personal web page) stated the following:

> *My overall impression of this week on Cyber Island is one of an overwhelming curve. I have never learned so much in one week. I think the most gratifying experience was to overcome my own insecurities to work online. A down side however is the terrifying thought of receiving my telephone bill at the end of the month.*
>
> *I have been struggling tremendously with the technicalities, trying to understand the operation of the different programs in which we have to work. At times, I actually felt claustrophobic with all the e-mails coming in and not having enough time to read through and appreciate them all. However, I had a general feeling of a positive experience of all the wonderful people out there willing to share their experience...*

In her response to the activities of the first week, Gabrielle (sound clip on personal web page) commented:

The table below summarises Week 1 on CyberIsland:

Table 12: Summary of Week 1

Initial number of learners for Week 1	24				
Active learners (These learners were actively involved in the various activities of the week.)	**Tribe 1** (UNO)	**Tribe 2** (e-Learn-along)	**Tribe** (E-Go)	**Tribe 4** (Virtual Eves)	**Tribe 5** (Tribe5-NeverDie)
	Catherine	Dan	Warren	Beatrice	-
	Brian	Lisandra	Brenda	Mabel	-
	Gabrielle	Helen	Samantha	Geronimo	-
	Roleen	-	Ted	Jasmine	-
	-	-	-	Emma	-

Lurkers (These are learners who had not formally quit the module. But they were either not working synchronously with the rest of the group, or else they were not actively taking part at all.)	**Tribe 1** (UNO)	**Tribe 2** (e-Learn-along)	**Tribe** (E-Go)	**Tribe 4** (Virtual Eves)	**Tribe 5** (Tribe5-NeverDie)
	Wendy	BA	Catherine	Nadia	-
	Larissa	Madeline	James	-	-
	-	Todd	-	-	-

Discontinued learners (These are learners who formally dropped out of the course during this week.)	**Names**	**Reasons for discontinuing**
	Emma (Tribe 4)	Emma still had to complete some BEd modules at the same time as doing this eLearning module that is part of the MEd course. She decided that the workload was going to be too much if she attempted to complete them simultaneously and officially withdrew from the module.

Significant events	**Date**	**Nature**	**Purpose**
	18 July 2002	Synchronous session	To introduce the facilitator and the concept of the *Survivor*© game

Number of asynchronous postings	***Yahoo Groups***	***WebCT***
	142	0 (Not yet introduced)

Tools, products and services used	**Web-based**	**PC-based**
	Yahoo Groups (Messages, Files, Polls, Members)	Word processor (such as *Word* or *WordPerfect*)
	Various search engines	Graphics tool (such as *Paint, Corel Draw or PaintShop Pro)*
	Shareware/Free web hosting service	

<table>
<tr><td rowspan="3">Assignments</td><td colspan="3">Individual</td><td>Tribal</td></tr>
<tr><td colspan="3">Add to personal homepage:
• A photograph of yourself
• Short Curriculum Vitae
• The answers to these questions:
o What are your expectations in terms of the module?
o What is your current level of comfort with the Internet?
• An online poll on any topic related to the module.</td><td rowspan="2">Search for free/shareware applications available on the Internet.

Design a website in one of these free applications and present the free and shareware Internet applications that were found by the tribe.</td></tr>
<tr><td colspan="3">Report on the educational value of a specific shareware/free web-based application.</td></tr>
<tr><td rowspan="3">Challenges</td><td colspan="3">Immunity</td><td>Reward</td></tr>
<tr><td colspan="3">Play the Photo Shoot: Africa game online http:/www.cbs.com/primetime/survivor3/games/index.shtml. Post evidence of your highest score to Yahoo Groups</td><td>Explain the differences between synchronous and asynchronous communication.</td></tr>
<tr><td colspan="3"></td><td>Explain what an IP address is. How do you know what your IP address is at any given time?</td></tr>
<tr><td rowspan="2">Polls</td><td>Date</td><td>Number of replies</td><td colspan="2">Content</td></tr>
<tr><td>20 July 2002</td><td>17</td><td colspan="2">I have access to a networked computer (one that is connected to the Internet)...
• at home (35 %).
• at work (12%).
• both at home and at work (47 %).
• neither at home nor at work (6%).</td></tr>
</table>

Week 2: 25 July – 1 August 2002

The second week started with the much-needed synchronous face-to-face session. In this session, I started by once again explaining the concept of the *Survivor©* game and how the game elements are intended to guide the structure of the eLearning module. This time round the learners were more attentive because by now they had realised the extent of the module.

A number of misconceptions were cleared up. One learner, for instance, had not realised that being voted off meant that you lost your place in your original tribe and that you were, in addition, no longer in the running for the Grand Prize. Another wanted to know why they were not allowed to talk about the game. It was explained (for a second time) that only face-to-face and telephone communication was prohibited, and that they certainly were allowed to discuss everything and anything with their fellow learners in the online environment. This rule was introduced to compel them to use the mediums of communication that the Internet has to offer, both synchronously and asynchronously, in order for them to fully understand the capabilities and limitations of the medium.

Another learner wondered how it was possible to fit in all the assignments into the time available in one week. They did not, up to this point, fully understand that the nature of the module required of them to log in regularly and actively to participate on a daily basis. Many of the learners still thought they could complete the assignments in their own time – so long as they were completed by the time the module ended. We also dealt with my own expectations as the facilitator, and with theirs as learners and tribe members. Below is a list of ground rules that we agreed upon in this session:

- *You need to check your Elearn2002 Yahoo Groups web site on a regular basis for new additions. This means that you have to visit the site AT THE VERY LEAST once every two days.*

- *The Elearn2002 Group will be the hub for all our mainstream communication. You MUST therefore, have access to the web-based version of the group, even if you continue to receive your messages via e-mail.*

- *All new assignments will be clearly labelled (per week) and posted to the 'File' section in the Elearn2002 Group. It is YOUR responsibility to go and find them there. The following week's assignments will normally be posted on a Thursday evening.*

- *You need to discuss your plan of action for the tribal assignments with your fellow*

> *'Survivors' as soon as possible after the new assignments are posted. This is important because each week will be packed with activities that you will not be able to complete to an acceptable standard if you leave it to the last minute*.

The most important outcome of this session was the fact that they now understood how vital it was to access their *Yahoo Groups* on a regular basis. They understood that it was unavoidable that they would have only a limited time available for each new assignment – simply because of the extensive ground that we were covering in the module. I strongly believed in the value of providing learners with opportunities to experience the various facets of elearning in hands-on situations. Apart from extensive exposure to the tools, services and products available for educational use on the Internet, I also believed in the value of being a *power user* of the Internet. This did not mean that I wanted them to be web programmers or IT specialists after they had completed the module. It simply meant that I required them to feel comfortable and competent in the online environment, and that I wanted them to have a comprehensive idea of what is possible (and available) on the Net, and to understand how these functionalities could best be utilised in an educational set-up.

The learners also got the opportunity to share their fears, concerns and observations. The main areas of concern that were discussed were (1) the time and cost implications that participating in this module entailed, (2) access and technology problems, and (3) the implications of possessing only limited Internet and computer literacy skills.

I spent a great deal of time addressing concerns about the cost implications of the module. As Internet access is not free in South Africa, and thus every minute spent online is billed at variable rates, this was a very real challenge and not one that could be lightly swept aside. I explained to them that the costs they incurred by having to be online was but one of the sacrifices that they were going to have to make if they wanted to complete the degree because the very *nature* of the module required learners to spend a large number of hours online. One helpful alternative (for those for whom it was feasible) was for learners to work on campus in one of the computer laboratories. This arrangement would cost them nothing (in connection fees) because they were registered as students of the University. This was perceived by many as being an inconvenient solution because all of the learners worked in full time jobs during the day, and many also had family obligations and engagements in the evenings.

I communicated the crucial importance of the hands-on approach very strongly indeed

to my learners. I impressed upon them that the module had been deliberately designed so that they (the learners) would *learn* about *online learning* in an *online* environment. They needed to do this so that they themselves (who would one day teach learners in the same situation) could experience all the advantages, disadvantages and idiosyncratic situations that arise in an authentic elearning environment. I shared with them the philosophy of *having been there*, and having had first-hand exposure to the realities of online teaching. If the module was to be successful, the learners had to understand fully what the opportunities and challenges are that a person faces in an online educational environment. This was only possible if they had already experienced it themselves.

Although they appreciated the communication between themselves (the learners) and me (the facilitator), the learners were pleased to see their tribal partners in the flesh because this gave them a much-needed opportunity to share contact details and to draw up a feasible plan for working together on the collaborative tribal assignments. We also used this session to hand out the prizes to the winners of the Reward Challenge. The winners got a small box of chocolates (Roleen) and a mouse pad (Jasmine) respectively. I felt that it was appropriate to also give each of the other learners who participated in the Challenge a consolation prize in the form of a mug mat (Dan and Geronimo).

It was agreed that the deadline for the first week's assignments would be postponed until 12:00 on Saturday, 27 July 2002, so that everyone could get a fair chance to succeed after a confusing start. It was furthermore decided that the assignments of the following week would not be distributed before the above-mentioned deadline had been reached.

I responded (*Yahoo Groups*, Friday 26 July 2002, 12:38) to a question in this regard by saying:

> *I will put them up tomorrow once all the other assignments are in (the cut-off time is 12:00). I think it is only fair to give all the tribes the same amount of time.*

By Saturday morning (26 July 2002, 7:46), I posted the second week's assignments and the learners could start with the work for the week. At 9:04, I also posted the Immunity Challenge for this week. This time round the learners had to complete a typing test that they downloaded from the Internet.

Most of the learners had by then managed to complete the first week's assignments, even though there were a couple of learners who were still battling with technicalities. Catherine

(*Yahoo Groups*, Saturday 27 July 2002, 13:19) commented:

> *I am experiencing some problems with the uploading of my files. Please have patience. I am not giving up yet!!!!*

Catherine struggled throughout the afternoon, and, by 16:11, she posted yet another message:

> *I have a lot of trouble uploading my files.... Any advice form the ones who managed to do it all?*

She eventually managed to complete the assignments with no help from her peers on Sunday, 28 July 2002, 11:10:

> *My personal website is now more or less working! What a struggle. I am just happy to say that I learnt the most I could out of it, as I received no help from any outside party.*

On Sunday, 28 July 2002, 16:55, I revised the deadline for Week 2's Tribal Assignment. I deemed the assignment important enough to allow the learners the opportunity fully to explore the educational potential of both *Yahoo Messenger* and *NetMeeting*. The deadline for the Tribal Assignment (alone) was therefore extended until the next week (7 August 2002).

As the Saturday deadline also coincided with the end of Week 1, the learners were required (for the first time) to vote off one member from each of their tribes, to assess the members in their own tribe in terms of their team effort, and to conduct peer assessment of the work of the other tribes. Unfortunately, the server on campus, on which the voting station was hosted, went down, and as we were by now well into the weekend, there was little hope of getting technical support to remedy the situation. I posted a message (*Yahoo Groups*, Saturday 27 July 2002, 8:02) to this effect, and requested the learners each to send me a private e-mail that would tell me the following (quote):

1. *Your assessment (out of 25) of each of the other tribal websites.*
2. *The name of the person you would like to vote off your team.*
3. *Your assessment (out of 25) of each of the other individuals in your tribe in terms of their collaborative behaviour (team work).*

This backup plan had its drawbacks because some learners did not use my personal e-mail address (even though it was provided and explicitly requested), and instead posted their evaluations to the group as a whole. The votes had all come though by Sunday evening (*Yahoo Groups*, 28 July 2002, 23:08),

I was able to post the names of those who were voted off to the list.

> *The following people have been voted off and will start up the new tribe 5: Wendy, BA, Ted & Nadia.*
>
> *Could you guys please get together and decide on a name and motto for the new tribe ASAP?*
>
> *Hang in there!*

By Monday (29 July 2002, 12:07) the problems that had put the voting station beyond use had been fixed – although it would be more than a week before we would need to use it again. Since the deadline for the next collaborative exercise was only 7 August 2002, learners would only need to vote again at that time.

I nonetheless spent some time during this week correcting some technical errors in the voting station (such as the incorrect spelling of usernames), and I made certain that learner names were correctly grouped in their corresponding tribes.

At 23:20 on that same night, I posted a message in which I requested the learners to keep the evening of 7 August open for a synchronised contact session online and warned them that they would have to download and test the application (*InterWise*) prior to that date.

I furthermore wanted to know from them what had happened to the learners from whom I had heard either nothing or very little. At 21:22 I left the following message to this effect:

> *I need to know whether the following people are still on the course. If your name appears on the list below, could you please contact me at my MWeb address ASAP? The address is...*
>
> *Wendy, Larissa, Todd, BA, James, Catherine, Nadia*
>
> *If I haven't heard from you guys by Thursday, 1 August 2002, I will assume that you are not taking the ELearn module this time round.*

To this request, only Larissa and Ted responded by stating that they were still in the game. Catherine and Helen officially announced that they had withdrawn from the course. Because I received no feedback at all from Wendy, Todd, BA, James, and Nadia, I deduced that they would not be active members for the remainder of the game.

It was actually Saturday, 17 August 2002, 21:05, before BA and Wendy replied jointly in an e-mail:

> *... we are still battling to register with E-LEARN* [...] *We also wish to inform*

> *you that even though we were a bit slower to catch in, we now see the light in the tunnel. So, we got your message and are really working on it. We have managed to complete our URL activities in time, and even promise you to see more responses from us.*
>
> *Thanx for your patience and your loving concern.*

Throughout the module, I was extremely worried about the fact that these learners were not keeping up with the rest of the group. After the 4 weeks during which the module ran, they had still not managed even to access the *Yahoo Groups* web page where all the activity had been going on, let alone play their part in the tribal assignments, which I valued more than all the other assignments.

I relayed my concerns to the course coordinator by sending him an e-mail asking for guidance:

> *How worried do I need to be about the guys that hardly react at all, and when they do, are totally past recovery/past hope/helpless? Guys such as Wendy and BA seem entirely out of their depth.* [Translated]

The course coordinator replied to this cry for help by stating (in a private e-mail message, Friday, 2 August 2002, 09:23):

> *Guys who can't keep up, must fail. The MEd (CAE) is not a welfare organisation.* [Translated]

At another time (private e-mail message, Friday, 8 August 2002, 18:57), he reiterated this sentiment by saying:

> *I am comfortable if some of the slower learners fall off. This course is not for 'sissies'.* [Translated]

I had thus to accept the fact that some learners were simply not going to have what it took to complete the module successfully. I was also under immense time constraints at that time, and that made it extremely difficult to attend individually to learners who could not keep up with the predetermined deadlines that punctuated the course. Although my natural instincts and educational bias were such that I would have very much have preferred to take whatever action was necessary to prevent these learners from falling out of the course, time constraints were so great that this option was simply not possible at that time.

Week 2 ended with the majority of the active learners having successfully ftp-ed or linked their personal homepages to their shelters in

Hagar, the experimental server hosted by the Faculty of Education (Figure 12).

Figure 12: The Shelters on CyberIsland

Beatrice commented on her experience during the first week (Comment on Personal Web Site):

> *The speed is that of a roller coaster but one has no option but to join in the fun.*

It was fascinating to see Beatrice making use of another game metaphor, namely 'ilinx' to describe her first week on CyberIsland. Ilinx types of games are founded on dizziness and vertigo, typically such as experienced in a roller coaster ride (Callois 1986).

The table below summarises Week 2 on the 'Surfiver' CyberIsland:

Table 13: Summary of Week 2

Initial number of learners for Week 2	23				
Active learners	**Tribe 1** (UNO)	**Tribe 2** (e-Learn-along)	**Tribe** (E-Go)	**Tribe 4** (Virtual Eves)	**Tribe 5** (Tribe5-NeverDie)
	Catherine	Dan	Warren	Mabel	-
	Brian	Lisandra	Brenda	Geronimo	-
	Gabrielle	-	-	Jasmine	-
	Roleen	-	-	-	-
Lurkers	**Tribe 1** (UNO)	**Tribe 2** (e-Learn-along)	**Tribe** (E-Go)	**Tribe 4** (Virtual Eves)	**Tribe 5** (Tribe5-NeverDie)
	Larissa	Madeline	Samantha	Beatrice	Ted

Discontinued learners	**Tribe 1** (UNO)	**Tribe 2** (e-Learn-along)	**Tribe** (E-Go)	**Tribe 4** (Virtual Eves)	**Tribe 5** (Tribe5-NeverDie)
	-	Helen	James	-	Wendy
		Todd	Catherine		BA
		-	-		Nadia
Reasons for discontinuing	**Learner**	**Reasons for discontinuing**			
	Todd (Tribe 2)	Todd did not respond to my request for confirmation of his continued participation, and was therefore regarded as one of the learners who had withdrawn from the course. He did however mail a link to his first attempt at making a personal website during this week, and he requested help from his tribal members to make a screen print. This activity, however minimal, indicated that he was still participating.			
	Helen (Tribe 2)	Helen's work required her to travel. Because of this, she could not continue because of the difficulties of connecting to the Internet.			
	Catherine (Tribe 3)	She withdrew for personal reasons.			
	James (Tribe 3)	James was actually an undergraduate-student assistant in the audience during the first information session and should not have been allocated to a tribe in the first place.			
	Nadia (Tribe 4)	Nadia did not respond to my request for confirmation of her continued participation, and was therefore regarded as one of the learners who had withdrawn from the course.			
	Wendy (Tribe 5)	Wendy also did not respond to my request for confirmation of her continued participation, and was therefore regarded as one of the learners who had withdrawn from the course.			
	BA (Tribe 5)	BA did not respond to my request for confirmation of her continued participation, and was therefore regarded as one of the learners who had withdrawn from the course.			

Significant events	**Date**	**Nature**	**Purpose**
	25 July 2002	Face-to-face (synchronous session)	• To explain once more how the game works • To discuss the expectations of both the facilitator and the learners • To answer urgent questions • To lay down some ground rules
Number of asynchronous postings	***Yahoo Groups***		***WebCT***
	272		Not yet introduced
Tools, products and services used	**Web-based**		**PC-based**
	Yahoo Groups (Messages, Files, Bookmarks, Polls, Members)		Word processor (such as *Word* or *WordPerfect*)
	Yahoo Messenger		Graphics tool (such as *Paint, Corel Draw, or PaintShop Pro*)
	NetMeeting		*Sound recorder* and microphone
	FTP programme (such as *CuteFTP*)		
Assignments	***Individual***		***Tribal***
	• FTP your personal homepage to the CyberIsland on Hagar [a local experimental server]. • Personalise the picture of your shelter on the virtual island.		• Download *Yahoo Messenger* and *NetMeeting* onto your computer. • Add the other Survivors to your list of friend/contacts. • Arrange to meet synchronously and experiment with the various communication functionalities. • Draw up a table that compares the educational value of the various functionalities. • Upload the table to your tribal website. • Peers assess the work of the other tribes.
	• Add a sound file in which you give your impressions of the first week on the CyberIsland to your personal homepage (on Hagar).		

Challenges	Immunity		Reward
	• Download a free demo version of Typingmaster 2002 (http://www.typingmaster.com). • Type for 2 minutes. • Make a screen dump of your results and e-mail it to ELearn2002. Person with the highest net speed wins Immunity this week.		-
Polls	**Date**	**Number of replies**	**Content**
	25 July 2002	10	Will you be ecstatic (and forever grateful) if I extend the deadline for the first week's assignments until noon this coming Saturday? • Aaah, yes please! (100 %) • No way. I worked really hard to be ready on time. It won't be fair at all! (0%) • Any which way is OK with me. (0%)

Week 3: 1 – 8 August 2002

Week 3 started with most learners experiencing huge levels of relief because of the progress they had made and the satisfaction that their accomplishments had given them. Most of them were also exhausted because of the pressures that the deadlines for individual assignments and accompanying technical difficulties had exerted on them. However, as Lisandra (*Yahoo Groups*, Thursday, 1 August 2002 1:11) put it early one morning:

> *I am finally able to say that my website is now in Hagar and if I can do it ANYBODY can do it!!*

I posted the week's assignments at 10:45 on Thursday, 1 August 2002. These only entailed the new individual assignments for the week because the tribal assignment from Week 2 was still being processed. As this week's highlight was the synchronous contact session on Wednesday, 7 August 2002, in which we planned to use *InterWise* (a commercial Israeli

product available locally and one that specialises in voice-enabled synchronous elearning), much of the initial communication this week dealt with the logistical arrangements to get the *InterWise* participant software downloaded and installed.

I wanted the learners to experience a commercial product of this nature and selected *InterWise* because of my prior positive experiences with this system (in spite of our limited South African bandwidth). The Executive Management of the local company who distributes the product here in South Africa was kind enough to sponsor the session in exchange for the opportunity to receive local exposure. With *InterWise*, learners log on at a set time for a session of a predetermined length, and interact in real time with the facilitator and the other learners through the medium of voice (audio), chat (text), and, for example, a PowerPoint presentation.

Our *InterWise* contact supplied the learners, via e-mail, with full and detailed instructions on how to download and install the software they were going to use on Wednesday evening. They were also reminded to register themselves as new users at the *InterWise* Communication Centre.

Each learner was also requested to arrange a session with the *InterWise* Technical Support Staff in order to run a few tests on the system. This was done to ensure that all learners were not only up and running by the time the real session started, but that they were also all familiar with the basics in terms of what to expect and how to communicate with the program.

The learners all indicated one after the other that they had completed the required downloading and testing of the software. The air seemed to be full of excitement and anticipation as the contact session drew closer.

On Wednesday morning, 7 August 2002 at 8:57, Lisandra stated (under the heading *Tonight's the night!!!*)

> *Just to inform everybody that I am also ready for tonight's session and I am really looking forward to this one!!*

Our session was scheduled for 2 hours, starting at 20:00. From about 19:00, quite a number of learners were already 'taking their places' in the classroom so that they would have adequate time to deal with any problems they might have logging on. As Brenda (*Yahoo Instant Message*, Wednesday, 7 August 2002, 19:18) confessed:

> *I logged on early ...was afraid I would not get a proper seat!* [...] *Dan has*

> *been in and out of here all day – much too curious!* [Translated]

to which I responded with:

> *Seems to me you did the same ...lol.* [Translated]

The evening went well and many learners commented afterwards that they were pleasantly surprised by the quality of the sound and visual material.

Dan (*WebCT* posting, Tuesday 13 August 2002, 09:22) commented:

> *I must say that, all things considered, I think the session went very well, and I enjoyed it immensely.*

Eleven out of the 16 learners still active in the module were able to connect. Not all of them, however, were successful in attending the session from home. Geronimo and Jasmine, for instance, made alternative arrangements beforehand, and joined up at Geronimo's house because Jasmine was experiencing hardware problems with her computer at home.

There were those like Larissa (*Yahoo Groups*, Wednesday, 7 August 2002, 11:18) who desperately wanted to attend, but who, because of her computer hardware limitations, could not download the system.

> *I wont be able to attend this session, my hardware at work cannot support the necessary software, and I don't have ready access from home. Good luck to everybody, I am extremely jealous. Enjoy, Larissa*

Larissa's computer turned out to be totally inadequate for the purpose of this module as it couldn't even run the latest version of Internet Explorer (Version 6 at the time). The computer at her home was meant to be there for the sole purpose of her husband's business activities and because of this, it was not available for her to use. On Tuesday, 13 August 2002, 17:43, she stated in a *WebCT* posting:

> *I was unable to access the software on my work computer. For starters it has no sound card. I tried to get the system going at home on the bread-and-butter-generating machine in the middle of the night, but soon realised there was no point as ... on the Wednesday evening I had to attend a school function.*

Others such as Gabrielle, who had moved house during the week, missed the e-mail requesting her to test the system before the Wednesday evening session in the domestic chaos that accompanied the move.

Gabrielle experienced a traumatic week, to say the least. Apart from having to move, her work computer was stolen from her office on the Saturday of that week. She therefore had many personal challenges to cope with during the week.

Although Samantha certainly attempted to download the *InterWise* software on Tuesday, 6 August 2002, she experienced *cookie* problems that she did not seem to be able to cope with – despite an e-mail from myself with instructions on how to correct the settings. We never heard from her again with regard to this problem, and, sadly, she subsequently missed the Wednesday evening session.

Although Beatrice made contact with the group during the week, her postings dealt with the individual assignments of the *previous* week. She made no mention of an attempt, successful or otherwise, to download the *InterWise* Participant software, or to test the system beforehand.

Madeline had been extremely quiet up to this point, and had made no contact with the group that week. She did, however, attend the session, but because she had no microphone attached to her computer, she was not able to communicate with the rest of us. Neither did she use the chat facility to join the discussions.

Afterwards, though, she commented (*WebCT* posting, Monday, 26 August 2002, 23:17):

> *The preparations and the actual participation in the session made us to learn to use technology and to share the wonderful experience with others. This was a lovely experience even with my family.* [...]
>
> *The session was a wonderful and informative experience.* [...]
>
> *This was an experience of a life time even though there were a few technical problems.*

Wendy, BA, Todd, and Nadia did not make any contact with the group during that week, and neither did they attend the synchronous *InterWise* session.

Even though this was a very new way of learning for most of the learners (only Mabel had previously been exposed to the product), they easily became accustomed to its format and very quickly started to participate in a stimulating and satisfying learning experience.

It has to be acknowledged, though, that the nature of the mini-lectures presented during this *InterWise* session by the 4 nominated tribal representatives, were very traditional in the sense that they were all presented in linear format, and were constructed as conventional lectures that utilised PowerPoint

presentations in conjunction with ready-made chunks of pre-digested text to serve as content.

As Dan (*WebCT* posting, Tuesday 13 August 2002, 09:22) commented:

> *I did feel that one failing was in the lack of interactivity. [...] I feel that if the instructor is just going to read through a PowerPoint slide show, we might as well cut a CD and mail it to our learners...*

The general absence of interactivity and creative presentation should be understood in the context of their unfamiliarity with the product and their lack of experience of what might be possible to achieve in a medium such as *InterWise*. I am convinced that if they had been given further opportunities to explore the full potential of the medium, they would have been able to come up with far more stimulating and creative presentations.

The majority of the learners expressed their surprise and astonishment at the high quality of the *InterWise* session.

Brenda (*WebCT* posting, Wednesday 14 August 2002, 16:00) made the following comment:

> *... I was very sceptic about the online session. What if the mic doesn't work, do I speak too loud or too soft, will I remember the tenses, what if my dear computer starts with his tricks again... As time grew nearer I was convinced that this was going to be a disaster. What a pleasant surprise! With the exception of one or two hiccups, nothing major went wrong. I was amazed how easy it was to get connected and everything set up.*
>
> *Will I use it again? I think that one will have to be very short sighted not to use this very versatile tool.*

Brian, in a *WebCT* posting dated Monday 12 August 2002, 21:11, commented on the limitations of bandwidth by stating:

> *I really think it went well. For me it was a new experience. I didn't think it could work so well in South Africa.*

In a *WebCT* posting on Tuesday 13 August 2002, 20:03, Geronimo mentioned that he was

> *pleasantly surprised with the 'smoothness' with which the evening went! I have a 28K modem (yes I know, ancient) and I did not have any problems hearing or speaking to anybody.*

Dan (21:01) replied almost an hour later with:

> *Yep, I have been working with the Internet since 1992, but have never used this technology, I was amazed … when you understand a little more about routing and the IP protocol you become even more amazed.*

Earlier that morning, Dan (*WebCT* posting, Tuesday 13 August 2002, 09:22) also commented:

> *After logging in to Interwise to test the system for the first time, I was amazed by the technology! Being able to hear the instructor's voice, have him take over my computer to adjust some settings was actually almost better than having the instructor lean over my shoulder!*

He added:

> *Communication* […] *was just about as good as speaking face-to-face, this I would say was something that stood out for me. It was also as if, because of the medium, people tried to express their ideas more concisely and even their enunciation of words seemed more measured than in usual conversation.*

Warren (*WebCT* posting, Wednesday 14 August 2002, 10:22) said that he

> *found the* InterWise *session very exciting. I was stunned by the sound quality, the standard of the presentations (considering it was our first attempt), the graphics, the tools available, etc.*

Others though, like Mabel (*WebCT* posting, Wednesday 14 August 2002, 15:59), were not as excited about the experience:

> *I was more than a bit excited towards to oncoming encounter. There had definitely been elements of anticipation, tension and enthusiasm on my part. These elements are great contributors in a learning situation.* […]
>
> *The situation we took part in on Wednesday night went (for me) something like this: I was listening to a conversation, passively and without the ability to participate due to bandwidth problems*
>
> *The bandwidth is more than a temporary technical difficulty. The fact that not everyone can join has its*

pedagogical price. Are we willing to pay that price?.

Although the lack of adequate bandwidth is certainly a problem in South Africa, this particular learner's problems were unrelated. However, with limited knowledge about the *InterWise* system, and computer hardware, learners often did not know who or what was to blame when they experienced technical difficulties.

The synchronous *InterWise* session was wrapped up by a brief tribal council session, during which each of the participants was given an opportunity to share his or her experience of the module thus far. Central challenges addressed included:

- Technical (hardware, software and connectivity) difficulties experienced
- Lack of sleep and amount of time spent in front of the computer
- The heavy workload and the high-speed pace of the module
- The high cost implications of being online for so many hours on a daily basis
- The fact that some tribes were experiencing a serious lack of communication in addition to large amounts of underlying personal conflict.

On the positive side, many of the learners commented on how they had enjoyed exponential levels of personal growth and learning during the experience, and how they had enjoyed every minute of the module, despite recurrent feelings of being overwhelmed by the number of new things that they were learning. The excitement of being privileged enough to experience the full potential of online learning in this manner also became evident in a number of responses.

The end of Week 3 once again required each of the tribes to each vote off a member. As most of the tribes only had 2 (or at most 3) active members left, a restructuring of the tribes became necessary. The week ended with all tribes assessing the work of the others, and an asynchronous voting session.

Table14: Summary of Week 3

Initial number of learners for Week 3	16				
Active learners	**Tribe 1** (UNO)	**Tribe 2** (e-Learn-along)	**Tribe** (E-Go)	**Tribe 4** (Virtual Eves)	**Tribe 5** (Tribe5-NeverDie)
	Catherine	Dan	Warren	Mabel	-
	Brian	Lisandra	Brenda	Geronimo	-
	Gabrielle	-	-	Jasmine	-
	Roleen	-	-	-	-
Lurkers	**Tribe 1** (UNO)	**Tribe 2** (e-Learn-along)	**Tribe** (E-Go)	**Tribe 4** (Virtual Eves)	**Tribe 5** (Tribe5-NeverDie)
	Larissa	Madeline	Samantha	Beatrice	Ted
Discontinued learners	**Names**	**Reasons for discontinuing**			
	-	-			
Significant events	**Date**	**Nature**	**Purpose**		
	Wednesday, 7 August 2002	This *InterWise* session was: • web-based • synchronous • audio-enabled • geographically dispersed.	To expose the learners to a commercially available product that allows for real-time, voice-enabled educational contact even in spite of unavoidable hindrances and obstructions such as the limited bandwidth available in South Africa		
Number of asynchronous postings	***Yahoo Groups***		***WebCT***		
	69		1		
Tools, products and services used	**Web-based**		**PC-based**		
	Yahoo Groups		Word processor (such as *Word* or *WordPerfect*)		
	Yahoo Messenger		Presentation programme (such as *PowerPoint*)		

	InterWise / CampusWise *WebCT*	Microphone and speakers / headphones
Assignments	***Individual***	***Tribal***
	• Download the *InterWise* software. • Test you system's compatibility with the technical staff from *InterWise* prior to this session. • Show up on Wednesday, 7 August, and participate actively.	Continue your investigation into the capabilities of *Yahoo Messenger* and *NetMeeting* in an educational environment.
	By now your own web site contains: • some personal information • a photograph • a paragraph stating your expectations for the course • a poll • a sound file. This week you must add links to sites that will perform conversions on your behalf (such as, for example, degrees Celsius to degrees Fahrenheit).	
	• Select one member of each tribe to facilitate an interactive and entertaining mini learning event of about 15 minutes on the topics provided in the synchronous *InterWise* session. • All the other members of the team must – individually – compile a report (600 words maximum) on one of the topics provided.	

Week 4: 8 –15 August 2002

This week's assignments were posted to the group on Thursday 8 August 2002, at 20:03. In spite of this, Week 4 started at a very slow pace, possibly because the Friday was a public holiday and thus the start of a long weekend. Learner activity only picked up again from Monday, 11 August 2002.

It was during this week that I officially introduced the commercial Learning Management System (LMS), *WebCT*. After a number of technical problems with usernames and passwords, most learners intuitively managed to use the Bulletin Board for their responses to the Individual Assignments of the Week. A couple of learners, though, got stuck on the University of Pretoria (UP) student portal, and posted their messages to a general message board that is open to all students of the University who use *WebCT*.

The *WebCT* environment at University of Pretoria is set up in such a way that there is a student portal (with a general bulletin board) that allows learners access to a number of University services. Learners then have to click on the link that specifies "Registered Courses" before they are shown a list of courses that are available to them in *WebCT*.

What happened was that some learners logged into the Student Online Services (SOS) page, and immediately started posting their responses on the general message board instead of first accessing their Elearning course. If they had first accessed their own Elearning course, they would have been able to post to the dedicated Bulletin Board that is a feature of the course.

Dan was the first to highlight the problem in a private e-mail to myself on Tuesday, 13 August 2002, 15:22:

> *It seems that not everyone is posting their messages in the same place i.e. in WebCT. Does it matter?*

After some discussions about the problem in *Yahoo Messenger*, I finally realised what had happened. I also realised that it was impossible for me (as a lecturer accessing via the Lecturer's Portal) to access the University's SOS without an active student number. I was therefore not able to see the interface that the learners encountered when they accessed the site, and could consequently not immediately suggest to them the correct path to take. Dan took it on himself to contact those who were posting outside of the module, and to explain to them that they should first access the course.

Dan made all the others aware of this problem the following day in *Yahoo Groups* (Wednesday, 14 August 2002, 11:01):

> *Please note that some people have been posting to the wrong bulletin board.*

Catherine was one of those who was using the wrong discussion forum. She responded on Wednesday, 14 August 2002 at 16:18 with:

> *Thanks Dan! I just saw the others there and posted mine there too, but moved it when I read your note (around 2 am.)*

Mabel (*WebCT* posting, Wednesday, 14 August 2002, 11:14) posted her response on the correct Bulletin Board within the course:

> *Sorry, until Dan's e-mail I was sure I was in the right place.*

Lisandra similarly realised that I was referring to posts in our *Yahoo Group* e-mails that she was unaware of, and she informed me about this in an e-mail. When I accessed the course through the Lecturer's portal, I was unaware of the fact that some learners were already discussing the assignments for the week on the general (student) board. Luckily, this problem was soon resolved as the learners, once they had been made aware of the mistake, cut and pasted their previous comments and postings into the correct message board that was reserved only for the module.

It was not long after the introduction of *WebCT* that learners began to complain about the *number* of different programmes that they had to use. Lisandra wrote on Wednesday, 14 August 2002, 14:34:

> *I am really getting very confused as to where we all need to go to to read up on the groups messages and discussions (Using* Yahoo messenger; WebCT; UP Messaging Bulletin Board *and* Yahoo Bulletin Board*!!!). Will we from now on only chat on* WebCT *or are we still going to use this Bulletin Board as well?*

Since it was important for the learners to have a 'home' base, I decided that *WebCT* provided them with an integrated learning environment that was safe, easy to use and free from distracting advertising. I furthermore wanted to encourage learners to make use of the new environment because it would provide them with the opportunity to experience what a commercial LMS has to offer. I posted my thoughts on this matter in a response on Wednesday, 14 August 2002, 18:13, entitled *Communication Channels*:

> *Even though we may still use ELearn 2002* Yahoo Groups *for general questions and comments, I would like to suggest that we move our discussions to* WebCT *for the latter part of this module.*
>
> *This is simply because I would like you to experience the difference in the two mediums (one a Freebie and the other one a LMS available commercially). I would advise you to*

> *check both of these communication channels on a regular basis.*
>
> *You may still use* Yahoo Messenger *in the background with your tribal mates and other friends, however this will not be our official meeting ground. As for the* UP Discussion Board*, it has nothing to do with our course and is there for a different purpose.*

This week was further characterised by issues surrounding the peer assessment strategy by means of which we were allocating marks to the various tribal assignments. Sensing that emotions were starting to run high because of assessment *malpractices*, I requested the learners to suggest criteria for the peer assessment of their work, and the assessment of their tribal member's collaborative behaviour (team work). The learners then posted their preferred criteria to *WebCT*, after which I consolidated their inputs into 2 rubrics that I required them to use for that week's voting exercise.

It seemed that the learners encountered fewer technical difficulties with that week's tribal assignment for which they had to create a number of games (in a web-based environment) based on a topic relevant to the module.

The week ended on a high note with the announcement of the Grand Prize. On Thursday afternoon, 15 August 2002, 17:20, the e-mail went out under the heading *Surfiver GRAND PRIZE!*

> *Great news! Johannes turned the Dean's arm and convinced him that the winner of our Surfiver game deserves a break after all the trauma that this module has put you guys through.*
>
> *SO, the Grand Prize will be..... (do you hear the drum roll?)*
>
> *A weekend away for the winner and his/her family in a self-catering unit on a well-known resort not too far from Pretoria!*
>
> *I am convinced that whoever wins the final battle will agree that their family/loved ones have also felt the impact of this module (both emotionally and financially!) and that they therefore deserve the break as much as the winner him/herself.*

After this mail, all that was needed to wrap up Week 4 was a reminder to learners to go to the voting station before midnight struck. The outcome of this voting session was important because the majority of the tribes had become too small to function properly.

Table 15: Summary of Week 4

Initial number of learners for Week 4	15				
Active learners	**Tribe 1** (UNO)	**Tribe 2** (e-Learn-along)	**Tribe** (E-Go)	**Tribe 4** (Virtual Eves)	**Tribe 5** (Tribe5-NeverDie)
	Catherine	Dan	Warren	Mabel	-
	Brian	Lisandra	Brenda	Geronimo	-
	Gabrielle	-	-	Jasmine	-
	Roleen	-	-	-	-
Lurkers	**Tribe 1** (UNO)	**Tribe 2** (e-Learn-along)	**Tribe** (E-Go)	**Tribe 4** (Virtual Eves)	**Tribe 5** (Tribe5-NeverDie)
	-	-	-	-	Beatrice
					Samantha
					Madeline
					Larissa
Discontinued learners	**Tribe 1** (UNO)	**Tribe 2** (e-Learn-along)	**Tribe** (E-Go)	**Tribe 4** (Virtual Eves)	**Tribe 5** (Tribe5-NeverDie)
	-	**-**	**-**	**-**	Ted
Reasons for discontinuing	**Names**	**Reasons for discontinuing**			
	Ted	Ted had been out of town, first for business, and then for a congress. This made it impossible for him to connect on a regular basis. By the time he got back from his various trips, he had lost too much work to be able to catch up. He therefore announced that he would not be continuing with the module.			
Significant events	**Date**	**Nature**	**Purpose**		
	8 August 2002	Introduction of *WebCT*	To expose learners to the features of a commercial Learning Management System		
Number of asynchronous postings	***Yahoo Groups***		***WebCT***		
	69		54		

<table>
<tr><td rowspan="5">Tools, products and services used</td><td>Web-based</td><td colspan="2">PC-based</td></tr>
<tr><td>Yahoo Groups</td><td colspan="2">Word processor (such as Word or WordPerfect)</td></tr>
<tr><td>Yahoo Messenger</td><td colspan="2">Presentation programme (such as PowerPoint)</td></tr>
<tr><td>InterWise / CampusWise</td><td colspan="2" rowspan="2">Microphone and speakers / headphones</td></tr>
<tr><td>WebCT</td></tr>
<tr><td>Assignments</td><td colspan="2">Individual</td><td>Tribal</td></tr>
<tr><td colspan="2">• Access WebCT and create your own password.
• Once inside our course, post a message to the bulletin board in which you share with us your impressions of the synchronous InterWise session. Reply to at least one other of these 'impressions' postings.
• In another posting, comment on key factors to consider when planning and presenting an event such as the one we experienced on Wednesday evening. Once again, reply to at least one other 'key factor' posting.</td><td rowspan="2">Create at least 6 different web-based games/learning activities (such as 'Hangman', 'Rags to riches' or a 'Scavenger hunt') related to the selected topic.
Make use of the free 30-day trial period provided by QUIA (http://www.quia.com/web/index.html) or any similar web-based tool for this assignment.</td></tr>
<tr><td colspan="2">This week you should add a jigsaw puzzle that (when assembled) makes a picture of yourself. You may wish to use this site http://www.jigzone.com or something similar.</td></tr>
<tr><td>Challenges</td><td>Immunity</td><td colspan="2">Reward</td></tr>
<tr><td>What is a LMS? How does it differ from 'Content Providers'?</td><td colspan="2">What is a bulletin board thread? How can one expand or collapse a thread in WebCT?</td></tr>
</table>

	Could you name a couple of LMSs?	After a slow start to the required discussions on *WebCT*, the following reward challenge was posted: A reward is offered to the person who opens the discussions on the topic on the *WebCT* Bulletin Board.

Week 5: 15 – 22 August 2002

The assignments for Week 5 were uploaded to *Yahoo Groups* (and to *WebCT*) on Thursday 15 August 2002, 17:05. I followed this correspondence up with an e-mail (17:27) that warned learners about the change in our approach for the last 2 weeks of the module.

> *As from this week, our focus will shift from 'process' to the 'product'. You will see a distinct change in the type of assignments for this week.*

I was happy with the experience that the learners had gained in the previous weeks, and was hoping to focus their learning on a higher cognitive level by getting them to synthesise and evaluate their learning so far.

I therefore shifted the focus on technical skills to a stronger emphasis on a holistic understanding of the elearning theme of the module. The aim then was to begin the process in which they would synthesise their knowledge about elearning while they continued (at the same time) to work together collaboratively in their new tribes.

As Thursday evening drew to a close, I reminded the learners that they had to visit the voting station before midnight. I also reminded them of a warning I had delivered during our very first contact session (*WebCT* posting, Thursday, 15 August 2002, 23:48):

> *Remember that I told you at our first meeting that you shouldn't get too comfortable in your groups? Well, as most of the tribes are getting rather small by now and the Tribal Assignment for this week is rather big, we are going to shuffle the tribes for the latter part of the game.*

After the voting station had closed at midnight I reorganised the tribes. I divided those that still remained in the game between Tribe 6 and Tribe 7, while I left those who had been voted off in Tribe 5. At this stage, it did not seem necessary to subdivide Tribe 5 because only a handful of those members were actively participating in the learning activities.

The message that went out on Friday morning, 16 August 2002, 01:53, stated:

> *As from this week (in other words, for Tribal Assignment 4 already) you are regrouped as follows:*
>
> *Tribe 6: Brenda, Geronimo, Lisandra, Dan and Roleen*
>
> *Tribe 7: Brian, Warren, Catherine and Jasmine*
>
> *Kindly decide on a name and a slogan for your new tribe and post itto our* WebCT *bulletin board.*

One of the learners who had been voted off was worried because her name did not appear in one of the two remaining 'active' tribes. She had not yet realised that she had already been voted off on Thursday evening. The intention was that she should join forces with the other members of Tribe 5. However, as they were mostly inactive, this represented quite a setback for her and for those others who were still actively involved at that stage.

Apart from the adaptations that accompanied the shuffle, a large number of 'tongue in the cheek' complaints arose when learners read about the upcoming online test the following week.

Dan was once again the first learner to respond (Thursday 15 August 2002, 23:59) with the following subject heading:

> *TTTTTTTest ^ *& ^ *&(%$#@*

The body of the message asked:

> *WWWhen why hhhow is this going to happen ????*
>
> *DDDDan*

Catherine soon replied (Friday, 16 August 2002, 00:06) with

> *Dan, my jaw is flat against the ground! You, afraid of a test?! How must the rest of us feel?* [Translated]

Geronimo also responded in horror (Friday 16 August 2002, 00:14):

> *Thought we were through with that!!!!!!*
> *:-0000000000h nooooooooo!*
> *:-)*

After all the complaints I had received from learners that led me to believe that they actually *hated* the constructivist style of learning style in which I facilitated the module, I certainly was not expecting this type of reaction to the announcement of a formal test. It seemed as if they were all horrified by the prospect of having to write a traditional

three-hour-long test, even though it was an online and open-book test.

I responded jokingly (Friday, 16 August 2002, 01:45) by saying:

> *When we do things in an unconventional manner, you guys moan! When we then do things in a more traditional manner, you moan even more!*
>
> *What AM I to do... ?!??*
>
> *Don't panic (this is what YOU need to do!). The test will be web-based. The idea is once again to provide you with the opportunity to personally experience e-testing*. [...]
>
> *Did I mention that the test would be 'open book'? Hope that alleviates some of the stress!*

On Monday, 19 August 2002, 01:43, I posted a spreadsheet with the preliminary assessment of the learners' individual tasks to *Yahoo Groups*. At 01:51, I posted the following message:

> *Please note that I have posted the assessments of the Individual Assignments to the 'Files' section of ELearn2002. You are welcome to discuss any problems with me. You will note that I gave you 0 if I couldn't find a specific assignment, whilst missing links also influenced your marks. If you let me know where I can find the assignments and fix the links soon, however, I may reconsider your marks.*
>
> *You will also notice that I only added those students who responded to my e-mail asking for your student numbers, initials and surnames. I take it that the others are not going to complete the module this time round.*

This message brought about a number of frantic e-mails with learners indicating where they had corrected any missing links, had updated their sites, and had completed outstanding assignments.

By means of this exercise, I concluded that only those learners who had responded in reaction to their marks not being posted, were still interested in completing the module.
The week ended with some learners feeling extremely satisfied and happy because they were finally functioning well as part of an active learning community. Others however felt rather sour and resentful because they were obviously experiencing some degree of discomfort in their roles in their new tribes.

Table16: Summary of Week 5

Initial number of learners for Week 5	15		
Active learners	**Tribe 5** (Tribe5-NeverDie)	**Tribe 6** (Cyber-Squatters)	**Tribe 7** (E-Eagles)
	Mabel	Dan	Warren
	Gabrielle	Lisandra	Brian
	-	Brenda	Catherine
	-	Roleen	Jasmine
	-	Geronimo	-
Lurkers	**Tribe 5** (Tribe5-NeverDie)	**Tribe 6** (Cyber-Squatters)	**Tribe 7** (E-Eagles)
	Larissa	-	-
	Samantha		
	Madeline		
	Beatrice		
Discontinued learners	**Names**	**Reasons for discontinuing**	
	None	-	
Significant events	**Date**	**Nature**	**Purpose**
	16 August	Shuffle of tribe members	To ensure that proper collaboration and optimal learning takes place
Number of asynchronous postings	***Yahoo Groups***	***WebCT***	
	62	12	
Tools, products and services used	**Web-based**	**PC-based**	
	Yahoo Groups	Word processor (such as *Word* or *WordPerfect*)	
	Yahoo Messenger	Presentation programmes (such as *PowerPoint*)	
	InterWise / CampusWise	Microphone and speakers / headphones	
	WebCT	Graphics tool (such as *Paint, Corel Draw, or PaintShop Pro)*	
	Search engines (such as *Google)*		

Assignments	***Individual***	***Tribal***
	Follow the clues and find the 5 web addresses of articles that you should work through with great care in preparation for the test next week.	Create a clickable concept map of all the elements related to teaching and learning by means of the Internet.
	Add any ONE of the following features to your personal web page: • a horizontal bar with scrolling text. The scrolling text should contain at least 5 benefits of elearning. (For an example, go to http://javascript.internet.com/scrolls/line-scroller.html) • a floating image containing a message that, when clicked, will take you to a motivational slogan that promotes elearning. (For an example, go to http://mailbox.co.za/index.pwm)	-

	OR Write a paragraph or two (total: approximately 150 words) about the use of special techniques such as scrolling or blinking text, animated gifs, sound files, bright colours and opinion polls on an educational web site. Tell us when it would be appropriate to use these devices – and when it would not. Post these paragraphs (as well as a list of 5 benefits of elearning) to your shelter.	
Challenges	**Immunity**	**Reward**
	Complete the Immunity quiz in *WebCT*. The person with the fastest completion time, and a 100 % score, will win Immunity this time round.	-

Week 6: 22 August – 2 September 2002

After uploading the new assignments on Thursday, 22 August 2002, 09:34, Week 6 began on a positive note. For the first time since Tribe 5 was established, some of the learners who by now had joined the tribe, made a special effort to reorganise themselves and to collaborate with the others in the tribe. Warren initiated this idea with his personal e-mail to me on Wednesday, 21 August 2002, 07:29. He wrote:

> *I am very keen to continue with the exercises (in the right way) as I learn a lot by doing them – Any suggestions? Can't we create another tribe for those who want to go through the exercises (without competing for a place as a winner), and who are still serious about the learning experience? I know that Gabrielle, for example, is keen to join somewhere on the same principle. Tribe 5 isn't really an option, since most of those learners are not taking this seriously.* [Translated]

On Wednesday, 21 August 2002 at 09:00 I responded as follows:

> *Could I suggest that you and Gabrielle make contact and try to work together on last week's 'concept map'?* [...] *And by all means, ask Larissa and Mabel whether they have yet slotted in with one of the other*

> *tribes. If not, they could possibly also work together with you guys. I would very much like to see that everyone makes use of the opportunity to learn as much as possible, despite underlying tribal problems.* [Translated]

Warren appreciated my response, and immediately made contact with the other learners. They also responded favourably – as one can see by Lisandra's response, as forwarded by Warren on Thursday, 22 August 2002, 07:48:

> *Hi Warren and Gabrielle*
> *Wonderful!! I had no idea that you have also ended up in Tribe 5. Less than nothing is going on there. I don't even know who all the members are suppose to be. It would be an honour to join you capable guys. I would certainly learn more from you than I would have on my own (struggling). Just tell me what to do.*

Warren also forwarded Mabel's response:

> *Yes!!!!!!!!!!!!!! I will be more then happy to join this group (I am a 'group learner' – I hate it when I have to learn by myself) just tell me what have you done by now and what should I do. Do you/we have a name for the new group? Have you made a website for the new group? By now I manage to work with Dream Waiver quite well and I can do another site.*

As Roleen was one of those voted off at the end of Week 4, she too was invited to joint the new tribe.

It was clear that none of these learners wanted to associate themselves with the (by now) totally dysfunctional Tribe 5. They thus chose to call themselves 'Tribe X'.

On Friday, 23 August 2002, 13:15, I indicated this week's tribal assortment and encouraged learners to make full use of the week's opportunities.

Tribe X immediately went ahead and created a new tribal homepage for themselves. Then, as a team, they came up with a rather solid concept map in no time. They also went ahead with the final tribal assignment and created an online learning intervention of substance by using the cost-free web-based service *NiceNet*.

The main theme for the week's discussions was the electronic test that was due to be written on that Wednesday. I was bombarded with questions such as this one from Roleen (*WebCT* posting, Tuesday, 27 August 2002, 09:00):

> *Can you please give us more information on the logistics of the test:*

> *shall we, for example, be able to start, work for 1/2 hour, disconnect, start again? What if there is a power failure? Or what if the computer bombs out? Or what if your internet connection bombs out?* [Parts translated]

I realised that the fact that they were not sure what to expect made the learners edgy and anxious even though I had built in some prior experience in using the *WebCT*'s quiz tool in the short Immunity Challenge quiz that had done the previous week. I tried to set the scene and assure them that they would not be penalised by external factors such as power-cuts in a *WebCT* posting dated Tuesday, 27 August 2002, 11:09:

> *I would like to put your mind at ease and say that the test you will write tomorrow is not the end of the world! Once again, the test assignment is all about being a learning experience in itself. You will be on the receiving side and will gain first-hand experience of doing an online test. I assume that you will then be in a better position to advise people about the various aspects of online / networked learning once you have experienced all the aspects yourself. (Challenge me on this if you disagree!)* [...]
>
> *About tomorrow's test:*
>
> *1. I will set up the test in sections so that you needn't be online for the entire period of 3 hours without a break. You will be able to access a section, answer the questions for that section, and submit your answers. This implies that you can take a break after each section before you attempt the next.*
>
> *2. Only your first attempt will be marked. That means that you should open a section, complete it, and submit your answer once you are satisfied with your response. Once you have submitted your answer, you should not go back and add anything, as only your first attempt will be valid.*
>
> *3. However, I know that there is always the possibility of a technical hiccup; you may lose your connection, there may be a power cut, etc. The test will therefore allow you to access each section of the test at least 3 times. If you do need to make use of these extra attempts due to technical problems, please notify me of the reason by means of e-mail.*
>
> *Good luck!*

I was interested to note that some of the learners who had lurking very quietly in Tribe 5 suddenly woke up when they heard about the test. It was almost as if this type of learning event was something with which they could at last identify. I got the impression that the constructivist style and the collaborative nature of the module was experienced by them as 'foreign', 'alien', and therefore difficult, while a summative test was something that they felt they could relate to.

Samantha (Saturday, 24 August 2002, 22:54) replied to my mail that was entitled, *The end is in sight!*

> *Just when some of us are beginning to enjoy pros, cons and challenges this cybermodule is serving us. It's not only "THE END IS IN SIGHT" but also 'The light is in sight' to some of us who've been in the dark for the better part of this module.*

Most learners managed to write the test without too many technical problems except for Brenda, who had been using Lisandra's Username and Password all along in order to access *WebCT*. She could, however, not use the same method of access with the electronic test since the test was set up in such a way that only the first attempt (and therefore, Lisandra's attempt) was accepted for marking purposes. We had urgently to organise a *WebCT* account for her personally, and she only then completed the test on Saturday, 31 August 2002.

In order to prevent learner from having to complete the test in one full session, I broke the assessment into 3 manageable sections of approximately 45 minutes each. *WebCT*'s survey tool was then used to add a fourth section, namely a Survey. It was explained to the learners that they had to complete the Survey (which was not intended for marks) in order to have the remainder of their tests marked. This arrangement ensured that all learners would complete survey with the much-needed feedback on the module.

Because I had never before used the Survey tool, I did not realise that *WebCT* does not reveal the identity of the person completing the survey. As the learners also did not know that their responses were going to be anonymous, the freedom with which the expressed themselves was not influenced.

On Wednesday, 28 August 2002, the tribes went to the voting stations to vote off the last members from the remaining tribes. On Thursday, 29 August 2002, they then made their final votes, this time to identify the sole *CyberSurfiver* who was to win the Grand Prize out of the group of 5 remaining 'live' tribal members.

At 14:42 on Thursday afternoon, 29 August 2002, I sent a light-hearted message to the group under the subject heading 'One last web page...'

to be visited as part of the Surfiver module:

http://207.89.188.135/eoti.htm

Figure 13: The End of the Internet

Figure 12 shows what the learners found on this page. The text read:

> ***The End of the Internet***
>
> *Congratulations! This is the last page.*
>
> *Thank you for visiting the End of the Internet. There are no more links.*
>
> *You must now turn off your computer and go do something productive.*
>
> *Go read a book, for Pete's sake.*

Many learners responded with smileys and emoticons, and Larissa (*WebCT* posting, Thursday 29 August 2002, 17:16) contributed:

> *Hi fellow survivors*
> *That is exactly what I am going to do for the next 6 days: visit the Mpumalanga reserve and climb a few trees, read a book etc. Thanks for an amazing experience, and all the help along the way. See you next week.*

Lisandra (*WebCT* posting, Thursday 29 August 2002, 16:45), though, responded with the following:

> *What an anticlimax!!! When I saw the heading I held my breath when I opened it – wondering if the last drop of blood, sweat and tears was now finally going to be removed from this already unstable mind and body! :-)*
>
> *Thanks, Linda, it was a steep learning curve – although certainly unforgettable and worthwhile!!* [Translated in part]

On this lighter note, I wrapped up the *CyberSurfiver* module online, and left for the University to meet the learners face-to-face in one final Tribal Council.

The debriefing session went well, with learners were eager to share their experiences and to ask the unanswered questions they still harboured. At the end, the Dean announced that Geronimo was the sole *CyberSurfiver* to remain. He had won by a large margin because he had by far received most of the final votes.

All that was left to be completed was the final individual assignment that required the learners to write a scientific article of such a standard that it could be considered for publication in an academic journal.

And, with the deadline for the submission of the articles clarified, a couple of tired, but satisfied, learners left the Tribal Council and went straight to bed!

Table 17: **Summary of Week 6**

Initial number of learners for Week 6	15			
Active learners	**Tribe 5** (Tribe5-NeverDie)	**Tribe 6** (Cyber-Squatters)	**Tribe 7** (E-Eagles)	**Tribe X**
	-	Dan	Brian	Warren
		Lisandra	Catherine	Roleen
		Brenda	Jasmine	Mabel
		Geronimo	-	Gabrielle
		--	-	Larissa
Lurkers	**Tribe 5** (Tribe5-NeverDie)	**Tribe 6** (Cyber-Squatters)	**Tribe 7** (E-Eagles)	**Tribe X**

	Samantha	-	-	-
	Madeline			
	Beatrice			
Discontinued learners	**Names**	**Reasons for discontinuing**		
	None	-		
Significant events	**Date**	**Nature**	**Purpose**	
	28 August 2002	Online test	To allow learners to experience everything that is related to taking an online assessment at first hand and in person.	
	29 August 2002	Face-to-face contact session	To conduct our final debriefing by means of a face-to-face Tribal Council and to announce the *CyberSurfiver* Winner of the Grand Prize.	
Number of asynchronous postings	***Yahoo Groups***		***WebCT***	
	74		14	
Tools, products and services used	**Web-based**		**PC-based**	
	Yahoo Groups		Word processor (such as *Word* or *WordPerfect*)	
	Yahoo Messenger		Presentation programme (such as *PowerPoint*)	
	InterWise / CampusWise		Microphone and speakers / headphones	
	WebCT (Specifically the Quiz and Survey tools)		Graphics tool (such as *Paint, Corel Draw, or PaintShop Pro)*)	
	NiceNet (or a similar online learning environment)			
Assignments	***Individual***	**Tribal**		

	Prepare for an online test by reviewing what we have done so far in this module. Go to *WebCT* and write the formal test.	• Search for an appropriate tool, such as *NiceNet* or *Yahoo Groups* that will allow you to host a learning event online. • Then plan a learning intervention that will teach your learners a basic skill, and show how you would make appropriate use of the following components: ○ a synchronous communication tool ○ an asynchronous communication tool ○ the use of the Internet as a source of information ○ multimedia (for example, clickable pictures, scrolling text, sound, video and/or animation) ○ a poll ○ an online game/learning activity e-testing
	Write a publishable scientific article of approximately 5 000 words on the topic that is listed next to your name. The level and standard of writing should be of such calibre that you could submit the article to an accredited academic journal once you have completed it.	
Challenges	***Immunity***	**Reward**
	-	Who can tell us what the word 'cache' means? Why are files sometimes stored in the cache? Why would one sometimes wish to bypass the cache?

Closure

Chapter 5 aimed to provide the reader with an overview of the 6 weeks during which *CyberSurfiver* ran. Explaining how the elements of a reality game were introduced in an online course for adult learners, was the focus of this chapter.

In the following chapter, I will discuss some of the complexities that became evident in learner functioning, both individually and in groups, that were the result of the introduction of game elements, specifically those that were based on the television reality game, *Survivor*©.

Introduction

This chapter focuses on the effect that the introduction of a reality game such as *Survivor*© (revisioned as a metaphor of the original game and reformatted to suit the researcher's purpose), has on the dynamics and complexities of group functioning and interaction in a web-based module. This chapter describes the unique characteristics of the *Survivor*© game and the impact that these characteristics exerted on the group's functioning. I would like to explore the manner in which and the extent to which the tribal members, both as individuals, and as tribes, responded to the introduction of the elements of the reality game.

The following question guides reflection in this section:

> *How did the adult learners respond to the reality game elements that were introduced in the elearning module?*

The elements of the *Survivor*© game that will be discussed include the following:

- Group composition and the effect of the rearrangement or shuffling of tribal members into new tribes
- Isolation as experienced on the virtual island
- Tribal assignments
- Individual assignments
- Reward challenges
- Immunity challenges
- Tribal councils
- Voting
- The jury
- The Grand Prize

It is important to note that this chapter is not presented in the chronological order in which the previous chapter was presented. Each of the topics listed above is dealt with as a separate unit.

While the *Survivor*© metaphor may be regarded as *the* meta-game that connects and is relevant to all modules, many other smaller sub-games, such as the Immunity and Reward Challenges, were being played at the same time.

Apart from the *Yahoo Groups* e-mails, the *WebCT* bulletin board messages, the instant messages sent using *Yahoo Messenger*, and other sources, this chapter makes extensive use of the comments made by learners in three electronic tests and a *WebCT* survey that was conducted on Wednesday, 28 August 2002.

The survey asked learners to comment on the positive and negative influences that the metaphor of the reality game had exerted on their learning processes. When the data thus requested from learners had been both quantitatively and qualitatively analysed, a

number of noteworthy trends and incidents became evident.

The survey results showed that learners identified peer support as one of the more helpful features of the game. Many learners said that they had been both encouraged and supported by other players – sometimes even by learners from different tribes. Others stated that compulsory collaboration had affected their learning process positively.

In their survey comments, quite a number of learners explicitly identified *competition* as one of the strong motivators that was introduced by the Surfiver game. Others, in contrast, stated that they had been demotivated by the element of competition.

Among the negative elements of the game that learners identified were the voting process and the conflict that was engendered within some tribes. Learners also felt negatively about the exorbitant costs incurred by their having to be online for hours on end, the heavy workload, the asynchronicity, and the unavailability of certain members.

It is interesting to note that a number of students thought that the game metaphor had been introduced to offset the debilitating effect of the heavy workload that the module required. One learner commented:

> *The game was actually the sweetener to six weeks of real time torture*. [Anonymous survey response]

The *CyberSurfiver* game

During the first contact session, I asked learners to identify (by a show of hands) those who were familiar with the *Survivor*© reality show on television. I found that most learners had either watched it regularly, or had at least seen a few episodes. These then at least understood the conventions of the game. But a number of learners indicated that they did not understand the concept at all. I carefully explained to these how the game worked.

In spite of this, it soon became clear that one could not make the assumption that those learners who were unfamiliar with the *Survivor*© concept did indeed understand what was going on simply because one had verbally explained the concept as best one could to them. Roleen (Monday 22 July 2002, 22:08) was one of the learners who indicated that she still did not understand how the game worked:

> *I do have another problem – I do not watch TV, which means that I have no idea what survivor is. What is it all about?*

Catherine (Tuesday 23 July, 2002, 6:41) responded early the following morning with a simple instruction:

> *Watch the game tonight @ 19:00 on TV3.*

There were obviously mixed feelings among the learners about the *Survivor*© metaphor, and their responses to the survey question that dealt with this question manifested a variety of opinions. Gabrielle (Response to Question 4, Test 2) identified the metaphor of the *Survivor*© game as one of the strengths of the module:

> *Although* [an] *adult learner in our group, I experienced one of the strengths of the module* [as being] *the game and competition element made possible by Internet-based learning. It inspired people to achieve technical difficulties as challenges and* [they] *probably succeeded above their own expectations.*

One learner simply stated

> *VERY GOOD GAME*

while another learner commented anonymously in the survey

> *Metaphor or not, I have never learned so much in so little time and been so severely challenged in my life before. The game was actually the sweetener to six weeks of real time torture (meant in the best possible way). This is, however the most relevant course and has left me with a new vision and a wish for time to explore the possibilities and nitty-gritty of online learning more.* [...] *I came into it with no previous knowledge or experience, and walk away, limping, but informed.*

Some learners recognised the potential inherent in using games in an educational setting. Beatrice (Response to Question 1, Test 3) specifically applauded the incorporation of games into the elearning environment as a device that could mitigate the sense of isolation and loss of social context that elearning formats can sometimes engender. She wrote:

> *Include relaxing exercises like games, immunity, puzzles, etc.*

Not everyone however was appreciative of the fact that this module was presented in a game format. As one learner explained:

> *I am not fond of playing games. It makes me feel insecure and not in control and I do not like the feeling. I felt that it was called a game so that we would not become so uptight and stressed. Perhaps it was*

> *also meant to cover the workload under the metaphor of it being a game.*
>
> *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.*

Other negative responses included the following:

> *Yes, I mentioned at the beginning that I dislike it, and I think I still feel that way. I watch very little television, and I don't think that I am a competition person. I may actually have learnt more if is wasn't for the game.* [Anonymous survey response]
>
> *But it* [the *Survivor*© metaphor] *was ... a separate dynamic from the rest of the process. At times it was distracting.* [Anonymous survey response]

Another learner also initially disliked the use of the game metaphor, but noted that it became irrelevant as he/she became more involved in the learning activities.

> *I personally didn't like this metaphor. It has to do probably with the T.V. show that I don't like. At the beginning it made me nervous, but then I was doing the task and that metaphor was irrelevant.*

In closing, one of the learners made the following statement in a focus group discussion about the metaphor format :

> *Painful learning. It was no game. You know that, hey... it was no game.*

In the following section, I shall examine the dynamics in the group on the basis of the various elements of the *Survivor*© reality game that were introduced into the module.

Group composition

Because groups are an inevitable component of society and most work situations, they also feature in higher education teaching and learning. Groups are often formed in the workplace in order to improve performance (Wageman 1997). University teaching may benefit learners by giving them some introduction to the experience of working in groups (Anderson & Moore 1998), a skill that they will be able to use for the rest of their lives.

Since the study was based on the premise that 'group assignments in a cooperative learning environment can improve student learning' (McDonald 1995), we divided the learners in the module into groups (or 'tribes',

to use the *Survivor*© metaphor) during the first face-to-face contact session we held for the module. It was during this first brief contact session with the group that the *CyberSurfiver* game concept, by means of which the module was going to be presented, was introduced. Learners were told what to expect, and were given the opportunity to post questions about the way in which the module was to be offered.

Tinzmann et al (1990) state that shared knowledge and authority, and heterogeneous groups of students, are essential characteristics of collaborative classrooms. Whereas homogeneous groups place similar students together, heterogeneous groups emphasize diversity in groups. Thus, according to Tinzmann and others, a critical characteristic of a classroom in which learners are supposed to work cooperatively together is that learners are not segregated according to ability, achievement, interests, or any other characteristic.

Time and care were therefore expended during this introductory contact session to ensure that learners were *not* divided into their respective tribes on the basis of their homogeneous Internet literacy. I requested the students present to position themselves on an imaginary straight line in a way that self-identified their degree of Internet literacy. Thus one end of the line represented those who possessed little or no Internet experience while the other end of the line represented a high level of familiarity.

Learners at each point on the line were then numbered from 1 to 4 and were afterwards grouped together by number. Thus all the ones were placed in one tribe, all the twos were in another, and so on. In theory, this ensured that each tribe consisted of an even mix of both skilled and inexperienced learners with varying degrees of Internet literacy.

What in fact happened though was that only a handful of learners identified themselves as 'knowledgeable' as far as Internet literacy was concerned. The majority of learners crowded together on the non-skilled end of the line. Even so, I was, in the end, able to assign at least one learner who was an experienced Internet user to each of the tribes, and he or she was able to take on the role of *Webmaster*.

Right from Week 1, the tribes were bombarded with technical challenges, both as individual learners, and as groups. It was clear from the beginning that it would be essential for each tribe to have skilled Internet users because the outcomes of many assignments were dependent on the possession of various computer-related skills such as the ability to create a tribal website.

A degree of diversity was achieved through the division of *CyberSurfiver* learners into tribes in the way mentioned above. This tactic also tended to separate people who would usually form groups on the basis of shared characteristics and cultures. Learners with such similarities now found themselves in different groups.

Strong leadership was established in at least three of the four tribes. Those with technical expertise automatically became influential tribal members because of the direction that they could provide. In each these three tribes, leadership was established along these lines. Those who were less skilled provided (in most cases) enthusiastic and appreciative support in whatever way they could.

In the tribe that remained there were at least two strong personalities, even though neither of them possessed exceptional Internet skills. What aggravated matters for this tribe was that these two learners clashed quite early on in the game and thereafter seemed unable to resolve their differences.

Since one of their other tribal members withdrew from the course at the beginning of Week 2, and because the other three members could at best be described as 'lurkers' (i.e. learners who did not formally withdraw from the module, but who did not actively take part in tribal assignments), it became a matter of importance for these two active and dominant tribal members to cooperate. Unfortunately, their inability to resolve their differences for the greater good led to the demise of this particular tribe.

One of these learners commented in the survey:

> *I hated the first tribe. The only other person that was more or less active – only when it suited him – refused to work at his own expense at night and during weekends with the result that he only worked during office hours from his office at the university while I tried to run a business during the day and only worked at night – like most of the other students.*

Brenda also commented in her response to Question 3, Test 3, that

> *Leaders were hardly ever democratically chosen. They tended to be the person with the most technical skills. They were often self-appointed.*

It was clear therefore that active participation and open channels of communication were of the utmost importance to these learners.

Active participation and availability

Haiman (1951) noted that while some group members devote a major part of their lives and thoughts to the group, and therefore become centrally involved, others remain on the fringes and only become peripherally involved. In the Surfiver case study, this was particularly true in each of the initial four initial tribes. There was a clear divide between those who were fully committed to the learning process from the start, and those who could never quite decide whether to commit or not.

While Lisandra believed that the function of community identity is important, she also indicated in her response to Question 3, Test 3, that it is important in a learning community to have a

> *shared space with the aim of bringing people together in an socially enabling environment. This worked well* [in CyberSurfiver]*, although not everybody made use of this shared functionality to share and learn from each other.*

The active participation of all members was in fact urgently required because all the tribal assignments were both demanding and time-consuming. This meant that when only two members of a tribe were active, those two carried a much greater responsibility and workload than the members of tribes in which everyone participated equally.

Geronimo (*Yahoo Groups*, Wednesday 24 July 2002, 12:11) expressed his concern about the lack of response from many of his tribal members. After many failed attempts to make meaningful contact with them, he asked:

> *I basically want to know if it will be OK if we do not do the assignments with the rest of the group*?

Once initial misinterpretations of the nature of the game, and accompanying expectations, had been clarified, the tribes slowly started to make contact with their members in order to collaborate. At first, specific members made tremendous efforts to make contact with the other learners in their tribes. This turned out to be a more than daunting task because not everyone logged in regularly and sometimes days would pass before contact could be made with some learners.

Personal preferences

People in everyday life make decisions about what groups they would like to join. If they support a cause that is advocated by a particular group, they might seek to join that group. In such circumstances, membership might be both profitable and logical for

them because they perceive the group to be compatible with their ideals and purposes.

I'll join you!!

Geronimo yelled (Wednesday, 24 July 2002, 12:28) after Brenda, in frustration, had suggested to Lisandra that they form their own group – with the proviso that they should obtain the active support of someone who was skilled in web design. This was still early on in the game when learners were upset about the unavailability of some of their tribal members.

Gabrielle also indicated her wish to join a particular group. Gabrielle was quite despondent when she was voted off, and asked to be allowed to work with the stronger Tribe 7 who had in fact invited her to join them earlier in the day – rather than the notorious Tribe 5. In a *Yahoo Messenger* conversation (Tuesday, 20 August 2002) she stated:

> *I would much rather work with the strong group – simply since I am not going to be strong enough to create something sensible out of Tribe 5.* [Translated]

The fact that Tribe 7 approached her with an offer to join them was indicative of the beginnings of an online community in which members were looking after each other. I agreed with her that it would probably be better for her own learning if she were to spend the remainder of the time working with the members of Tribe 7.

During the next week though, burglars entered her office and stole her computer. This left her unable to collaborate with the other tribe members. She then informed us of her intention rather to concentrate on the Individual Assignments and to miss the Tribal ones for the ensuing week.

In the meantime, a number of other strong members had also been voted off and had ended up in Tribe 5. As the majority of them did not want to be associated with this dysfunctional tribe, they began negotiations among themselves to form a new tribe which they called Tribe X. Since the deadline for the week's Tribal Assignment had been (unofficially) postponed, newly formed Tribe X found that they also now had an opportunity to create a clickable concept map.

Shuffling the tribes

While, by the end of Week 4, some of the original tribes had established a sense of trust and group security among themselves, some other tribes had never been fully functional. For a number of reasons, some tribes had only had two active members from Week 1. In others tribes, tribe numbers

had dwindled as learners were voted off at the end of each week. In contrast to this trend, Tribe 5 had grown in proportions. In fact the number of learners in Tribe 5 would have become unmanageable if all the members had participated actively. By the end of Week 4, there was a clear need to regroup the remaining learners in order to ensure a degree of effective collaboration.

In spite of the fact that the remaining numbers of active members in each *CyberSurfiver* tribe made effective group collaboration difficult, I tried to remain as true as I could to the reality show when designing the module. In the television version of *Survivor*© tribal members were often caught off guard by a sudden and unexpected regrouping of all group members about half way through the game. I therefore rearranged the members who were still in the running for the Grand Prize into two new tribes which were called Tribe 6 and Tribe 7. This surprise regrouping happened at the end of Week 4, immediately after the computer had finalised the voting results at midnight.

The literature is often contradictory in its findings on whether homogeneous or heterogeneous groups function best (Schniedewind & Davidson 2000; Anson & Dannels n.d.; Flowers & Ritz 1994). As part of the design experiment, I therefore divided the learners into more homogeneous groups for the remaining two weeks of the module. I was interested to see how my regrouping would affect the dynamics within each tribe. For this reason, I deliberately grouped those learners with strong technological capabilities together in Tribe 6 while I constituted the other new tribe (Tribe 7) with learners who had strong educational skills and qualifications. Because there were only a few active members left in Tribe 5, I let them remain together as a group. The heterogeneous nature of the original tribes thus only endured until the end of Week 4 (the time when they were dismantled).

Shortly afterwards, some of the learners who had been voted off in previous rounds, and who were thus supposed to join Tribe 5, requested permission to establish a new tribe of their own. They preferred to do this (they said) rather than join Tribe 5 because, as they explained, they considered Tribe 5 to be totally dysfunctional. Tribe 5 had originally been created to accommodate expelled members. This new tribe (having been given permission) now seceded from Tribe 5 and called themselves Tribe X. Learners such as Gabrielle, who had earlier asked to join Tribe 7, now joined this new tribe instead.

Week 5 was therefore characterised by the side effects produced by radical changes as learners moved into new tribes. New members obviously needed time to settle into their new tribes, even though they were still required to produce scheduled tribal and

individual outputs by the end of the week. This was a particularly stressful requirement because tribe members had to go through all the usual phases of group formation (forming, storming, norming, and performing) all over again (Tuckman & Jenson 1977). In the anonymous survey one learner commented:

> *It was necessary to reshuffle, but challenging as the work also got more difficult and challenging and some time was needed to settle into new tribe.*
> [Anonymous survey response]

As I mentioned above, some of the original tribes had been functioning efficiently as those members who remained each contributing positively to the outcomes of the assignments. Other tribes, though, were ineffectual and ridden with conflict. It was therefore interesting to observe how various individuals interpreted the changes occasioned by the reallocation of existing members to new tribes. To some it was obviously a relief to be working with new tribal partners, while others felt shaken and disorientated by the changes that had been made. It was indeed surprising to find that only one learner indicated in the survey that his/her learning had been negatively influenced by the shuffling of the tribes. He/she stated that

> *... the collaboration wasn't on the same level as in the initial tribe.*
> [Anonymous survey response]

On Tuesday, 2 August 2002, Roleen (YM *Instant Message*) and I had a long discussion about the workings of the new tribe. Roleen felt that they had not been able to settle down and attain coherence as a new tribe.

> *Things have not yet been sorted out at all!* [Translated]

She actually mentioned that she looked forward to the voting session on Thursday because she felt that things might go more smoothly with fewer members in the tribe, or with her no longer in it. She specifically commented on the fact that it is not easy for a leader to emerge because

> *everyone knows something.*

In a *Yahoo Messenger* conversation, Dan (Monday, 19 August 2002) also confessed:

> *Actually it might be easier at this stage to be in Tribe 5!*

When he was asked why he felt this way, he replied:

> *I could do it by myself ... Not that negotiation is a problem, it's just not that easy online!*

In a *Yahoo Messenger* conversation with Catherine (Thursday, 22 August 2002), she indicated that one of the members of the new tribe had given up.

> *He voluntarily decided to joint Tribe 5.*

It seemed as though Tribe 5 was becoming increasingly attractive as levels of conflict and the need for interpersonal negotiations rose steeply in the other tribes. Some learners simply preferred not do collaborative work. He/she showed this in his/her response to the anonymous survey:

> *I believe that much more could have been achieved if we had done individual assignments.*

Some of the learners were more direct and expressed their negative experience of the shuffling exercise quite explicitly:

> *Not very happy. 5 of the top people were in a group and the other group were not very good and I and another person had to do all the work.*
> [Anonymous survey response]

> *Disorientating.*
> [Anonymous survey response]

> *I felt more confused as it became NOBODY's task to build a new website and have it up and running.*
> [Anonymous survey response]

> *Sadly, the collaboration wasn't on the same level as in the initial tribe.*
> [Anonymous survey response]

Others noted that their learning had been positively influenced as the fresh approaches contributed by the new members encouraged and motivated them. One of the learners expressed his/her delight unequivocally:

> *I could at last experience the joy of working in a functional tribe*.
> [Anonymous survey response]

Another learner commented that he/she was relieved to be in a functional tribe at last since his/her initial tribe had been riddled with conflict and had been unable to make any contribution to the learning process.

> *At last there was some participation.* [...] *When the new tribes were formed I was in seventh heaven. It was wonderful to be able to work with real students and not just ghost lurking in the back booing but doing nothing else. I could at last experience the joy of working in a functional tribe.*
> [Anonymous survey response]

Other positive anonymous survey responses are listed below:

> *My learning was encouraged by the new perspective added by the members of the group ... It also was an enormous morale boost to be invited to join Tribe X at that stage.*
> [Anonymous survey response]

> *They say a change is as good as a holiday! So I enjoyed the change –* [and it] *didn't negatively influence my learning – in fact it opened up new perspectives on the assignments!*
> [Anonymous survey response]

Some learners were grateful of the lighter workload that the regrouping of tribal members occasioned while others found it disturbing to find themselves in a tribe where all the members had more or less the same abilities.

> *Did not influence my learning at all. Made my workload lighter!!*
> [Anonymous survey response]

> *I did not like it – Of the 5 learners 3 had the same abilities!*
> [Anonymous survey response]

Felder and Brent (1994) state:

> The drawbacks of a group with only weak students are obvious, but having only strong students in a group is equally undesirable... The team members tend to divide up the homework and communicate only cursorily with one another, omitting the dynamic interactions that lead to most of the proven benefits of cooperative learning. In mixed ability groups, on the other hand, the weaker students gain from seeing how better students study and approach problems, and the strong students gain a deeper understanding of the subject by teaching it to others

While some learners were cautious, others were detached in their judgements:

> *It was fine for us since the more competent* [learners] *ended up in two tribes ... But it may not have been for the other tribes*
> [Anonymous survey response]

> *I didn't mind that I now had a different group to work with. I knew the people so is made no difference.*
> [Anonymous survey response]

> *It didn't influence* [me] *much because I was already in a big tribe that had not acquired much*

> *direction and the shuffling did not affect the tribe except* [by] *adding more members.*
> [Anonymous survey response]

There were quite a number of comments related to the disorienting nature of the changes. As one learner put it:

> *I felt more confused...*
> [Anonymous survey response]

In response to Question 3, Section 3, of the elearning test, Roleen had the following to say:

> *Disorientation is a problem which is frequently observed in studies of hypermedia users and a problem which significantly limits instructional outcomes. In our class this was a problem, especially when we started to shift in the egroups. One would feel orientated and know what to do and what skills all members have, and the next day be completely disorientated because you are in a new group.*

It is significant to note that Roleen was a member of Tribe 1 (UNO) – the tribe that had had the largest number of learners actively involved throughout the first four weeks of the module.

Tinzmann et al (1990) argue that segregation seriously weakens collaboration and impoverishes the classroom by depriving all students of opportunities to learn from and with each other. As it happened, many of the members who remained in Tribes 1 to 4 were all moderately competent Internet users who had fulfilled the various roles of a webmaster in their earlier tribes to a lesser or greater extent. Once they were joined together with other learners with similar strengths in Tribes 6 and 7, they suddenly had to contribute individual skills on another level altogether. But this time round they were required to make individual contributions that were on a higher cognitive level than the technical contributions that they had made earlier in the game.

After the shuffle, all members in a tribe could, for instance, code in HTML, ftp with equal facility, or create a clickable map. They also had to be able to negotiate mental models and argue their positions with scientific skill. If they did not demonstrate such skill, the others simply disregarded their contributions.

Roleen made the following response to Question 3, Test 3:

> *I do think that this would have worked better if we stayed in fixed groups. When we were moved to new groups, people with the same abilities were grouped together and*

> *those who were not very comfortable with the net were grouped together. I do not think that they learned much, eventually.*

Anson and Dannels (n.d.) argues that groups that work together over a long period have the advantage of consistency of response, and the trust that develops over time. They get used to each other and find synergetic harmony in their mutual interaction. They note however that if groups change before each assignment, they benefit from the advantages that accrue from having the variety of perspectives that each student's learning will bring to any situation. This elearning module demonstrated both these points of view.

Some of the learners were deeply upset by the changes in the groups' formations. They argued that they had had a particular role to play in the old group, or that they had just managed to achieve a degree of understanding with their erstwhile team members.

The survey response

In Week 5, a survey was used to question learners about their preferences with regard to tribal composition. Surprisingly, 10 out of the 15 active learners indicated that they preferred homogeneous groups in which all the other learners had the same abilities as they did. Only one learner indicated that he/she preferred a group in which all the other members were less able than him/herself (the survey was anonymous). Four learners favoured a heterogeneous group in which other learners were more able than themselves.

Although the survey alone does not provide enough information in this regard, it is anticipated that further studies will show that learners will indicate a preference for homogeneous groups in which members are willing to contribute to tribal assignments and make themselves available for contact and communication, rather than for groups distinguished by high levels of skill alone. Some of the learners were simply unable to function properly in their tribes because of interpersonal difficulties. The following anonymous response to the survey shows the frustration of one of the learners who felt strongly about the need for tribal members to communicate synchronously:

> *He was also not available for ANY synchronous communication – not even the forbidden telephone call.*

The survey further revealed that most learners considered the lack of communication and active participation among tribe members as one of the most negative features of the module. One learner specifically identified the

"dead" tribe members

as a negative element of the game.

Even though the majority of the learners indicated a preference for homogeneous groups, it was clear from the start of the module that differences in levels of skills allowed weaker learners to survive during the first couple of steep learning curves.

The fact that most of the learners who ended up in Tribe 5 had little or no prior Internet experience also made them a homogeneous group. They also failed to demonstrate the same commitment to taking responsibility for their own learning that the others did. These learners did not do well and many did not complete the module.

Madeline (Response to Question 1, Test 2) emphasised her preference for heterogeneous groups when she identified level of competence as one of the indicators that a facilitator should keep in mind when he/she aims to address the inequalities of learners in a class.

> *Learners at a lower level should be considered when groupings are made so that they can get assistance from their peers.*

Larissa's agreement with this point of view was made clear in her response to Question 1, Test 2, when she stated that

> *collaborative learning through structured exercises will help: skilled partners can help the unskilled and learn a lot themselves in the process.*

Catherine (Response to Question 1, Test 2) suggested that inequalities with regard to knowledge of and experience in computers and the Internet could be overcome by the appointment of a mentor:

> *an advisor to help the person with less experience*.

In this particular group of learners, diversity was defined in terms of a number of factors that included language, age, race, culture, skills, experience, background, and gender. All these elements played a role in the dynamics in the various groups.

Isolation

> *HELLO ...? HELLO...? Hello...? Is there anybody out there ...?*

These words from Pink Floyd's *Comfortably Numb* aptly describe many online learners' experience. In fact, when Lisandra (*Yahoo Groups*, Wednesday, 31 July 2002, 07:38)

got stuck with a particular individual assignment she used almost exactly the same words to express her feelings:

> *HELP! …ANYBODY OUT THERE? … HELLOOO!?*

Because *CyberSurfiver* was presented entirely online and because learners had been specifically requested to refrain from personal and telephonic contact, I was interested to find out what effect this limitation would have on the learners in this module.

Quite a number of studies report on the importance of dealing with student's isolation in a distance education course (Besser & Donahue 1996; Twigg 1997; Galusha n.d.). Wegerif (1998) states that

> *individual success or failure in an E-learning course* [is] *dependent upon the extent to which students were able to cross a threshold from feeling like outsiders to feeling like insiders.*

Lindner et al (2002) also note that learners in online courses and programmes often feel isolated and apprehensive, and InnoVisions Canada (2004) lists isolation as one of the biggest disadvantages of elearning. Contrary to these perceptions, Larry Danielson (InnoVisions Canada, 2004) experienced just the opposite. For him the online environment was more intimate than the classroom because learners could be dealt with on a one-to-one basis.

According to Stelzer and Vogelzangs (n.d.), isolation has two dimensions:

- a physiological one (distance in place, being physically alone)
- a psychological one (distance in thoughts, feeling emotionally isolated)

They describe the challenge faced by online learning communities as one where the psychological dimension is a result of the physiological dimension.

At the introductory session of *CyberSurfiver* (Thursday, 18 July 2002), the *rules* of the game were spelt out. Among other rules, learners were encouraged to make full use of the Internet as their *only* medium of communication and to refrain from using traditional means such as the telephone and other face-to-face contact opportunities. I reinforced this injunction in a *Yahoo Groups* message on Tuesday, 23 July 2002 (00:29):

> *This part of the module is all about virtual community formation. That implies that you should transfer your normal mode of communication (telephone / face-to-face contact) to the virtual environment (the www).*

> *You are therefore encouraged to e-mail one another, to schedule tribal chat sessions in which you brainstorm your ideas for tribal assignments, to leave messages for one another on the bulletin board and to send each other instant messages online (the Internet equivalent of an SMS).*
>
> *The idea is to have your conversations in cyberspace and to refrain from taking the easy way out – by discussing them in class on a Thursday evening.*

This was certainly a new way of doing this for the learners. Brenda (*Yahoo Groups*, Tuesday, 23 July 2002, 06:43) commented on the isolation that she experienced in this type of learning environment:

> *Working on the Internet and having it as the only means of communication is a very lonely experience.*

Not being allowed to use other ways of communication apart from what the Internet has to offer was a difficult injunction to honour because learners would still be seeing one another on Thursdays at a contact class. Initially the elearning module was divided into two units, an elearning unit (in which the *CyberSurfiver*-game was played), and a portfolio unit which learners were expected to use to build up an electronic portfolio of their work. The portfolio was to be done in PHP and learners were supposed to participate in weekly hands-on (face-to-face) workshops for this part of the module. Unfortunately, the technologies needed for this section of the work failed to work and the unit was scrapped after it had become clear that the problems would not be resolved. It was also clear by that time that the Surfiver module was providing sufficient exposure to the elearning environment, and that is was taking its toll in terms of time and energy.

Throughout the module, I was aware of the fact that the learners had not stuck to our agreement that they would use *only* the online communication tools for their discussions about the module. It was only when I read the focus group transcriptions that I realised the extent to which this had been going on. Because the learners had been desperate for synchronous communication, they had used quite a number of alternative methods of communication apart from those that were available online. It became clear to me that they telephoned each other regularly, that they discussed points relating to the module at length at the contact sessions that they were engaged in for the other unit, that they visited each other's homes, and that they were even organising internal workshops and work sessions on Saturdays in

order to support one another in the technical activities.

This type of communication happened so often that one learner reported the following at the focus group discussion:

> *I think my wife thought* [that] *Jasmine and I were having an affair!* [Translated]

It was also clear form their comments that the need for synchronous communication was overwhelming and that learners who rigidly conformed to the original agreement about the channels of communication were relegated to the status of outcasts. Warren, for example, made it a point of honour not to break the rules. His inflexibility in this regard caused major conflict for him in both his first and his second tribe. On Wednesday, 21 August 2002, 07:29, Warren stated his case in an e-mail message addressed to me personally:

> *It came to my attention that the other members of my tribe hold meetings, in person, with the aim to complete Tribal Assignment 4 (amongst other). I was also approached earlier to join them this weekend. However I declined as it is directly opposed to the purpose of the exercise. These get-together sessions did however happen.*

Catherine (Thursday, 22 August 2002) discussed the same matter with me in a *Yahoo Messenger* conversation. She commented that the new tribe worked well together

> *apart from one member who already threw in his towel*. [...] *It's a pity, but he only worked during office hours, and then the rest of us is busy elsewhere.*

This complaint was similar to the one another learner expressed in the survey:

> *The only other person that was more or less active – only when it suited him – refused to work at his own cost at night and during weekends with the result that he only worked during office hours from his office at the university while I tried to run a business during the day and only worked at night – like most of the other students.*

It was clear that these learners, being adults with a will of their own, decided that it was more important for them to meet in person and to be able to complete the assignments satisfactorily than to comply with the *rules* of the game. I personally had no a problem with them seeking closer contact. In fact, I appreciated the commitment that they brought to their assignments. I was also convinced by that

time that they were fully experiencing the realities of being online learners, which was after all one of the main aims of this module. Because I could see that the learners desperately needed this kind of officially illicit contact and the technical support that it provided, I only reprimanded them jokingly (when at all) and never banned other kinds of communication with any degree of vehemence.

The fact that they were – for the bulk of the module – not physically in contact with the other learners constituted quite an adjustment for some of the more sociable personalities in the group. The following extract is from the Focus Group (8 May 2003):

> *I think the main thing is you're alone.*
>
> *Ja, isolation. The isolation is tremendous.*
>
> *Especially late at night.*
>
> *You want to work together with someone else in every task. Just to do it with someone else. To talk to them.*

In order to alleviate these feelings of isolation, I introduced *Yahoo Messenger* (YM) in Week 2. In the original design, this assignment was only due to be included at a later stage. But when I saw how desperate the learners were for contact with each other, I changed my initial plan and introduced YM earlier. YM allows learners to send instant and offline messages to each other. It also indicates to you which of your friends are online at any given time. This feature proved to be extremely helpful because, since learners were logged onto the Internet at the same time, they were now able to see who else was online. They then began to cross tribal boundaries and share their feelings with those who were available at the same time. The support network thus established by learners who accessed the Internet at similar times became an effective means of ameliorating the isolation that learners experienced, especially late at night.

The implementation of *Yahoo Messenger* meant that I became more easily available to learners at the times when they needed me. Often, in the middle of the night, I would receive an instant message from a learner asking me to take a quick look at their work-in-progress so that I could tell them whether they were on the right track or not. More often, though, these *Yahoo Messenger* discussions were of a personal nature, with learners sharing their own experiences in the tribes or even in their personal lives.

The module was also designed to give learners regular opportunities to work together and to interact with each other.

Tribal assignments encouraged learners to make contact with and support each other. The design of the module was intended to bring learners together by assigning tribal assignments to regular periods.

Isolation was counteracted not only by the efforts of the facilitator and the design of the learning experience. Gabrielle (Response to Question 3, Test 3) stated that she experienced the

> *clear intention to prevent students from feeling isolated. In practice it could not be avoided. Certain group members purposefully avoided contact with other members – sometimes because of the money constraints involved and sometimes working someone out meant not talking to them.*

Kochery (1997) suggests that cooperative learning models such as cohort groups can increase learner-to-learner and learner-to-facilitator interactions and that this type of interaction may combat feelings of isolation. In this study, I found that learners were less comfortable in their assigned tribal contacts than they were in the contacts they could make with learners who were not their tribes but who were online at the same time that they were. Geronimo, for example, responded in a *Yahoo Groups* e-mail to a message posted by Dan a couple of minutes earlier (Sunday, 28 July 2002, 01:27):

> *Still awake? Glad I'm not the only fool still working at this time on a Sunday morning!!*

The learners all had their own ideas about how to combat the feelings of isolation that arise in the elearning environment. I had included many reflective exercises as part of the design of the module. These exercises were designed to give learners an experience of what it was like to be an online learner, and their reflections on such an experience would affect the way in which they would teach online at some point in the future. Some responded with valuable insights about why learners felt isolated. Geronimo (Response to Question 1, Test 3) emphasised the importance of overcoming differential access to computers and the Internet

> *so that students don't feel left out*.

Other learners suggested ways in which to avoid these feelings. Lisandra (Response to Question 1, Test 3) mentioned that it is important to create a supportive community of practice by

> *creating a climate that is conducive to forming a strong bond between the community members*. [...] *Communities of learning provide*

> *emotional support in an otherwise very cold and isolated environment.*

In his comments on the synchronous *InterWise* session, Warren (*WebCT* response, Wednesday, 14 August 2002, 11:00) suggested that an initial face-to-face contact session might be effective:

> *What about a live (face to face, in person) session before the testing phase?*

Another learner also indicated the need for this type of contact in an anonymous focus group discussion:

> *People would like to have face-to-face stuff before they just go online.*

In a web-based distance education situation in which learners do not see each other or their facilitators, the absence of physical cues can lead to a degree of frustration among learners (Hara & Kling 1999). Several learners referred to the fact that there are no body language cues in an online environment, and that it was it difficult for them to communicate without these all-important visual signs.

Gabrielle (Response to Question 2, Test 3) mentioned that the elearning community had enriched her social skills because it had forced her to read "between the lines" rather than to rely on listening to the tone of a spoken voice. She also mentioned that it had taught her to rely on verbal rather than body language and to be sensitive to innuendo in the choice of words and phrases. She saw this as a dimension of communication that it is not possible to explore in face-to-face situations.

In a *WebCT* posting dated Tuesday 13 August 2002, 00:02, Lisandra reflected on the InterWise synchronous session and the fact that one is *blind* in the online environment:

> *I must admit I wondered at some stage if everybody who was signed on really listened to the presentations, or where they sending text messages – maybe criticising everything that was said or the manner in which it was said. In a face-to-face situation you have the benefit of reading people's body language to determine their interest in the specific matter.*

Catherine (*WebCT* posting, 14 August 2002, 02:40) also mentioned that she missed eye contact with others and identified this as one of the isolating factors in the online environment, especially during a synchronous online session:

> *The facilitator is unaware of social responses, if learners are still paying attention, if learning materials are*

> *being understood and absorbed and if people are sending messages to one another "under the table".*

In the *Survivor*© reality show on television, the camera often broke away to show private discussions taking place between certain members of a tribe. These talks usually reflected a conspiracy to vote a particular member off during the next round.

In this study, private discussions between the learners were not accessible – whether they were made telephonically, by means of instant messages, or in private e-mails to one another, and thus they were not captured for data-analysis purposes. That such behind-the-scenes discussions did indeed take place is undeniable, as Catherine's reference to the messages that were sent *under the table* confirms. Such messages were not designed to further conspiracies or create alliances among learners, but were rather more typical of fairly standard classroom behaviour in which learners gossip and discuss their fellow learners' teaching styles.

Geronimo characteristically admitted to enjoying this type of communication in his *WebCT* posting of Thursday, 15 August 2002, 11:04:

> *I loved being able to send messages "under the table".*

Geronimo also commented on his experience of feeling *blind* in cyberspace. He worried (*Yahoo Groups*, Tuesday 23 July 2002, 16:34) about whether his fellow Virtual Eve tribe members had received his messages and explicitly requested them to let him know if they had. This feeling of anxiety once again surfaced in his message on Wednesday, 24 July 2002, 10:39:

> *I really hope you are receiving this message!! … Please let me hear from you soon.*

It seems that it is not only the absence of body language that makes learners feel isolated; it is also the absence of interaction with their fellow learners. In *CyberSurfiver*, the learners needed feedback to help them cope with their feelings of isolation, and they specifically asked for it if it was not forthcoming. Brenda (*Yahoo Groups*, Tuesday, 23 July 2002) commented in this regard:

> *Well, we are on the island and the only thing that we can do is to try to survive* [...] *One's sense of isolation is made worse when you do post to a discussion and receive no response.*

She also responded (*Yahoo Groups*, Tuesday 23 July 2002, 06:43) as follows to a message from myself that encouraged the learners and praised them for their progress:

> *Thanks for this feedback. It makes me feel a bit less lonely on the island.*
>
> *Working on the Internet and having it as the only means of communication is a very lonely experience.*

Being connected by means of e-mail was extremely important to those learners who were actively taking part in the module. So much so that Mabel (*WebCT* posting, Saturday, 17 August 2002, 11:46) warned the rest of the group when her service provider announced that it was not going to be available during one particular weekend. She promptly provided them with an alternative e-mail address because she did not want to miss anything that happened over the weekend.

But it was not only isolation that learners experienced in the online environment. They also experienced the power of the Web as learning environment – as Jasmine's response to Question 4, Test 2, makes clear:

> *Resources and ideas are shared (in tribes and out of tribes as well!), and continuous synergy is generated through the learning process as each individual contributes to the course discussions and comments on the work of others. The synergy that exists in the student-centred Virtual Classroom is one of the most unique and vital traits that the online learning format possess. Definitely true – Surfivers was great!*

Lindner et al (2002) state that if online courses are to be successful, facilitators must permit learner-to-learner interaction to take place with a minimum of facilitator intervention. Because I felt that this was an important point, I intentionally stepped back at times and waited before responding to a particular question or a comment. At some points, I wanted to create a space in which the dynamics between learners could play out. At other times, I wanted to give them opportunities to support one another. I realised also that some learners enjoyed showing off their knowledge and became more confident when they were allowed to share what information they had with others.

Lindner *et al.* (2002) also argue that isolation can be reduced if one gives special attention to learners with low levels of self-directedness, and if one encourages learners to become more self-directed. In the original version of *CyberSurfiver*, this did not happen, for reasons discussed elsewhere in this thesis. We knew very little about those learners' feelings of isolation because they did not respond to the test questions that would have given us this information, and their limited number of e-mails did not overtly indicate such feelings.

Larissa, who admitted that she had not officially enrolled for the module because she was only interested in learning more about elearning in preparation for the following year, summarised her view on the *Survivor*© metaphor and her feelings of isolation as follows (Response to Question 1, Test 3):

> *I could really identify with the metaphor, as I felt like a castaway on a remote island most of the time. I was, however, determined to make the most of the learning opportunity*. [...] *On the positive side, there came bottles with messages floating by every now and again, just enough to keep going.*
>
> *On the negative side, I felt quite abandoned, as everybody else was competing for better and cleverer stuff in their shelters and for the prize, and I were still learning to swim, which I was my own doing for getting on unprepared and halfway through.*
>
> *But even that had a positive side to it: I have experienced first-hand the drowning bit, being out in the cold and not really part of the learning community.*

Apart from experiencing such feelings of isolation and helplessness (that were mostly self-imposed because she had participated actively right from the start), Larissa managed to obtain something worthwhile from the experience, and one assumes that she will be able to build on that knowledge when she starts teaching online some day. She left the module with some understanding of the steps that have to be taken if one wants to establish a sense among online learners of a belonging to a learning community.

For learners in an online environment, social interaction with peers and a facilitator can often be an exercise in frustration (McInnerney & Roberts 2004). Isolation or feelings of loneliness are thus not the only consequence of geographical isolation (Palloff & Pratt 1999). The section above shows that even though we are more connected than ever before, our connectedness does not eliminate our feelings of being isolated in the elearning environment.

Tribal assignments

Literature (Twigg 1997; Galusha n.d.; Wegerif 1998; Lindner *et al.* 2002) agrees that one of the most successful ways to eliminate isolation in the elearning environment is to ensure that the learners work together on a group project that has an explicit artefact or product as its outcome. Moore (2001) also states that it is important to engage learners in regular assignments so as to monitor

progress and be able to intervene when needed.

CyberSurfiver was therefore designed to include weekly assignments. These weekly assignments typically included a Tribal Assignment that required the tribe members actively to collaborate and cooperate with one another over the Internet. John Myers (1991) points out that the dictionary definitions of *collaboration*, derived from its Latin root, focus on the process of working together and that the root word for *cooperation* stresses the product of such work. In *CyberSurfiver*, both were equally important.

A response from an anonymous learner in the focus group discussions indicated that a "staggered" approach (meaning that only the assignments for a particular week were given out), was appreciated:

> *I liked the fact that it was on a weekly basis and that we didn't receive it all at once in the beginning.*

Dan (Response to Question 1, Test 2) mentioned that self-discipline is one of the main characteristics that learners should possess in an online environment. He felt that the weekly deadlines for the individual assignments provided a suitable stimulus in this regard

> *…by requiring that work be submitted at regular intervals, e.g. every week.*

In the Survey that was completed during the last week of the module, learners were asked which of the following options they preferred:

- To work on their own
- To work in a group
- To work both individually and as part of a team

Ten learners indicated that they preferred the latter, with 5 others indicating their preference for working alone. None of the learners preferred to work only in a group context.

In the same Survey, 5 out of the 15 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 elearning was the second most popular tribal assignment (with 4 out of 15 learners indicating it as their favourite). The other assignments (creating a website that presents free, shareware and/or demo applications, investigating the educational value of tools such as *Yahoo Messenger* and *NetMeeting,* creating learning activities, and setting up games using free services online) were all mentioned by various individuals as their favourites.

It was in these tribal assignments that groups either found or began to lose their sense of cohesion and group identity. Those tribes who survived without competing internally and without serious conflicts among their members, managed to create a strong sense of group cohesion and they worked well together towards specified outcomes. The levels of peer-support grew as inexperienced learners became more relaxed and began to feel secure enough to acknowledge their own limitations.

More often than not, those with superior technical skills accepted leadership positions as they began to perform most of the functions of a Webmaster. They not only provided their own academic inputs; they also had to tie up any loose ends after others had completed their contributions – with sometimes only minutes to spare before deadlines fell due. Deadlines were usually indicated by a date and a day and time specification, such as: Thursday, 29 August 2002 at 17:00.

What also happened (scarcely a desirable situation) is that these Webmasters often did all the work needed to create a final product for presentation for assessment. This happened not only because the tribes were desperately pressed for time or because there was no desire on the part of tribal members to participate, but more often simply because these Webmasters had unchallenged power. An anonymous response to a question about conflict in the Survey revealed the following:

> *I was quite put off after I had spent considerable time preparing information to be added to the concept map, and was told that an existing map would be used, as there was no time to do otherwise. I did not react to this.*

Another response also indicated that work that had been prepared for a specific tribal assignment had not been used:

> *I did not actively take part in any tribal assignment, except by writing stuff for the map (which could not be used as we consolidated two maps).*

Another learner reported on his/her participation in the tribal assignments by stating:

> *I was too slow for the clever guys – they did all the work.*
> [Anonymous survey response]

Gabrielle also commented on how tribal assignments were approached in her response to Question 3, Test 3:

> *Sufficient collaborative assignments were given to ensure that collaborative learning took place.*

> *However, in practice, it often happened that the fastest and fittest in the group did most of the work before anyone else could contribute. It was more often than not the case that the fast ones did not even consult the slower ones, and took it for granted that their answers would be presented as the answer.*

Another learner (Response to Anonymous Survey) contended that

> *the asynchronicity of the communication with the rest of my group and the sometimes deliberate unavailability of contact with certain members, made me do more on my own – even if my contributions weren't submitted by them.*

Samovar, Henman and King (1996) identified small group communication as a transactional process, a continuous and simultaneous interaction of persons, and not simply as a one-way sequence of events involving an active source and a passive receiver. They state that group members are mutually interdependent in that the success of the entire group is at least partly dependent upon the level of competence in communication of each participant. One learner admitted to experiencing mild levels of frustration as a result of this interdependence. He/she explained the source in an anonymous survey response:

> *Tribal members who did not "play the game" caused some irritation as they affected the progress of the group negatively, but it was not too bad. Other members who just went ahead and did things without involving the other members or giving them a chance to participate were also a small stone in my shoe.*

One of the Webmasters admitted to taking control in an anonymous response to a question about conflict in the Survey and provided a possible explanation:

> *People did not submit their tribal assignments on time. Did not influence my learning, though, as I just left their stuff out of the tribal website.*

Another response stated:

> *Not everyone participated and at number 99* [at the last minute] *you had to do all the work.*

One of the learners indicated in a focus group conversation that he/she felt a strong sense of responsibility towards the tribe.

> *I don't like competing either, but I used more time on the group thing*

> *because I didn't want to let the group down. So eventually I didn't have time to do the individual thing because I was now so trying to get the group, you know, trying to do my part for the group thing.*

Roleen (Response on Question 1, Test 3) commented that

> *most of the students complained that they "had to do all the work".*

Other learners saw things in a much more positive light. One learner explained how he/she felt that all the tribe members

> *contributed to the content together and in the end looked at it and said this is OUR product.*

There were groups though in which there were clashes of personalities among tribal members, groups in which the skills that were brought to the module were too similar, and groups in which tribal members never managed to synchronise their online availability. These tribes were riddled with conflict and soon became dysfunctional. It happened more than once that the only two people who were active in the tribe would upload their version of the tribal assignment, and they would do it without consulting others about whether or not they had any ideas or whether they were working on a component. This turned out to be a real problem because the success of the course (measured by how rich the learning experience had been for individual learners) was heavily predicated on the quality of collaboration between members.

The tribal assignments did however motivate learners to work together and to share information, often even beyond tribal boundaries. Lisandra (Response to Question 2, Test 3) mentioned that the elearning community extended her learning by creating a structure that allowed her to learn from the informal interactions that took place. She continued by saying that the elearning community made it possible for learners to

> *enhance and share practical know-how that would otherwise remain untapped. The community became a source of knowledge and relationships that can be used to increase individual effectiveness.*

She also mentioned that

> *People doing similar work learn from each other how to do their work better.*

A lot of the communication and interaction between the learners was not of an academic nature. Brenda, for example, mentioned in her response to Question 4, Test 2 that

> *Dialogue* [...] *often revolved around technical problems and administration of group activities.*

Lisandra (Response to Question 3, Test 3) agreed:

> *Very little knowledge was really shared between the members. Threaded discussions were more concerned with technical and administrative issues rather than* [with] *discussing issues of academic value.*

I agree that much of the communication centred on administrative, technical and peer support, and that an insufficient amount of real discourse of the kind that the design of the module had envisaged did not take place. But once *WebCT* was introduced, I got the distinct impression that more of the discussions of an academic kind were taking place. Such discussion and comments may indeed have been stimulated by one of the assignments that specifically required learners to evaluate an online learning session and to reply to at least one posting from another learner. This was the first time in the module that learners shared their ideas and impressions about elearning, and where the replies to each other's postings were not based on their need for peer support only but rather on a request for academic assessment and support.

I am not convinced that the design of the module encouraged a sufficient amount of collaboration among learners – other than what was absolutely necessary to produce assignments and meet deadlines. The fact that learners collaborated mostly in order to allocate roles and tasks, is disturbing. After that kind of initial role-defining discussion, they dispersed and completed their work individually without ever really getting back together to work collaboratively on the final product. Normally the compilation of all individual contributions was performed by the Webmaster, who, because of his/her advanced technical skills, made (by default) final judgements about what would appear on the site (sites that were created for assessment purposes). This problem needs to be addressed in future programmes of this nature. Among other important design principles, enough time should be allocated for an asynchronous interaction and collaboration component.

Most learners who were involved in tribes where positive collaboration took place, experienced such collaboration as a constructive element of the module. A response to the anonymous survey on a question relating to the influence of the *Survivor©* metaphor stated the positive element of the game to be

> *the positive collaborative interaction with some of the tribe members.*

The same person also stated that

> *the negative elements* [of the *Survivor*© metaphor] *was the frustration with tribe members not working or having excuses for work not done.*

A strong emphasis was placed on the importance of each of the members' contributions. Brian (Response to Question 4, Test 2) commented on the responsibility of participation in the group assignments:

> *Each week I had trouble with a group member who did not do their part and because you want good marks, you just do their work. They did not do anything but received good marks. Everyone must do their part!*

His statement emphasises that it is of fundamental importance to have some channel or mechanism that will compel learners to report their own degree of collaboration – as well as that of their group members. The comment above is especially interesting because Brian's tribe (UNO) was throughout the exercise regarded as one of the best-functioning groups, one in which all the members (apart from the one learner who was voted off at the end of Week 1) participated actively.

Soon after the first peer assessment activity, I revisited the design of these assessment sessions. Initially I did not require learners to indicate who in the tribe had been responsible for what. However, as learners began to complain about lack of participation on the part of some learners, or "free riding" as they called it, I introduced the following measure. Each assignment had to be accompanied by a statement from the tribe that indicated their various responsibilities. Geronimo (Response to Question 4, Test 2) noted:

> *Not all group members put in the same effort. In most groups 2 / 3 members did almost everything. It worked well to indicate "who-did-what".*

At one stage he complained in a *Yahoo Messenger* conversation (8 August 2002):

> *Struggling to get things for our tribal assignment!!!! Only Jasmine has given me anything!*

Dan also reflected negatively on the collaborative component of the learning experience in Question 4, Test 2. He believed that certain learners were more suited to web-based learning than others. He experienced the tribal assignments as a weakness, stating:

> *Perhaps it was because of the relative inexperience of most of the learners with the medium and the technology. In group assignments, many learners just disappeared or gave up. It must perhaps be borne in mind that this may not have been strictly a function of Internet learning, but perhaps because the learners were not suited to Internet learning for some reason.*

In contrast to these views, some learners experienced a high level of positive collaboration between the tribal members. According to her response on Question 4, Test 2, Gabrielle experienced the high level of interactivity and the tribal assignments in the module as a distinct advantage:

> *It activated students to become very involved in each other's efforts*. [...] *It enabled students to communicate in open and closed systems, which contributed to the establishment of social and academic relationships which would otherwise, because of a lack of time, would not have taken place.*

Catherine (Response to Question 4, Test 2) also commented that because of the tribal assignments

> *communication between students took place synchronously and asynchronously and more feelings of group cohesion resulted.*

Roleen commented on the *InterWise* session in which she had been the representative from Tribe 1 (UNO), the tribe that had to present the mini-lesson:

> *It was a worthwhile experience. Felt quite good about it. Roleen from UNO (We are number ONE!!!!!)*

Not only is it clear from this posting that Roleen enjoyed the session. The fact that she signed her name and made a specific reference to her tribe and their slogan, is also significant. This was one of the rare pieces of evidence that indicated tribal coherence and a sense of belonging.

I would like to give the reader some insight into the dynamics of at least one of the Tribal Assignments. The very first Tribal Assignment did not go according to plan. The majority of the learners neither realised that they should go to the web-based version of *Yahoo Groups* in order to access their assignments for the week, nor did they allocate enough time in their tribal planning to complete this activity. When the first activity on the electronic mailing list indicating an awareness of the assignments surfaced, around Monday, 22 July 2002, there was already too little time left for the tribes to work together effectively before the stated deadline. This time limitation added

more stress to a situation that was already volatile.

As the majority of the interaction between learners took place asynchronously, everything took longer than usual. Learners did not have each other's e-mail addresses because they did had not realised that the addresses were listed in the *Yahoo Groups* Members List. As I, the facilitator, was still under the impression that the learners all had access to the web-based version of *Yahoo Groups*, I did not foresee that this would be an important issue to address right at the start. With hindsight, I think that it would have solved quite a number of problems during the first week if I had collected all the learners' e-mail addresses during the first contact session, and then posted them in an e-mail message to all the learners who were taking part the module. This would certainly have made a big difference, as much of the first week's chaos can be explained by the fact that learners had difficulty in making contact with one another.

On Monday, 22 July, 23:17, Dan requested one of his fellow tribe members:

> *I have no one else's email addresses. Please send them to me!*

By Wednesday, 24 July 2002,17:43, he had still not made contact with all his tribal members:

> *Any Tribe 2's please post me your e-mail addresses. I have Lisandra's and Helen's.*

On Wednesday 24 July 2002, 12:11, Geronimo wrote:

> *It seems that we need to collate it onto a website? I have volunteered to do this, but I struggle to get hold of my group! I received no response form them!*

Samovar, Henman and King (1996) comment that a

> *shared commitment is one of the reasons that groups develop norms or standards of behaviour. These explicit or implied expectations are often unique to a given group and serve to unite the group members or to cause rejection when one of the members violates a group rule.*

It therefore becomes clear why those learners who did not log on regularly or contribute to the discussions online, were in some cases ostracised.

None of the tribes were ready to post their websites by the time the deadline (17:30 on

Thursday, 25 July 2002) passed. A number of learners requested an extension of the due date that evening, online as well as during the emergency face-to-face tribal council. Jasmine officially requested an extension on the deadlines on Wednesday 24 July 2002, 05:52:

> *Please, isn't it possible to postpone all these assignments to next week – to give all "dof" people like me a chance to find my feet?*

Later in the day (12:15), Geronimo was one of many who supported this request:

> *I support the plea for extra time – we really need more time to sort our groups out. It is absolute chaos on our little piece of paradise!!*

It was also clear that the learners needed a face-to-face session during which issues that had unsettled the learning process could be discussed. During the emergency face-to-face tribal council on Thursday evening (25 July), quite a number of perplexing issues were addressed. Among these were:

- the fact that the course was considered to be prohibitively expensive because of the long periods during which learners were required to remain online
- my expectations about learner responsibility
- the location of the planning document with the Assignments for each week
- the fact that asynchronous learning takes a lot of hard work and commitment from each individual in the tribe.

At this tribal council at the start of Week 2, the majority of the tribe members managed to exchange their urgently-needed e-mail addresses. However, during week 2, many of the learners still had still not managed to access the web version of *Yahoo Groups*, and were still not reading and replying to E-Groups messages on a regular basis. A meaning of "regular basis" was described in an e-mail (Tuesday, 23 July 2002, 11:55) to all the learners in the following way:

> *This means that you have to visit the site AT THE VERY LEAST once every two days.*

Because of their lack of participation, some learners were left behind. Some of the active learners tried their best to bring these invisible tribe members aboard. Lisandra wrote on Wednesday, 24 July 2002, 08:59:

> *Todd, Madeline and BA: We haven't heard anything from you guys. Are you experiencing some problems? I will appreciate it if you can send us your e-mail addresses so that we can get going with our web page.*

Because of the stringent deadlines, those who were active could not wait for the

others, but had to do what they could, even if it meant that they had to work harder than learners in those tribes where all the members were active. Eventually all the tribes successfully completed Assignment 1, even though the standard of work varied greatly from tribe to tribe.

By making Tribal Assignments a part of the design of this module, *CyberSurfiver* managed to teach learners in groups the importance of maintaining cooperative interaction. It also taught them that the success of the entire tribe was at least partly dependent upon the communication competence and the academic contributions of every one of the learners.

Individual assignments

Daniel and Marquis (1979) challenged distance educators to find the right mix between independent study and interactive learning strategies and activities. They pointed out that these two forms of education have different economic, pedagogical and social characteristics and that each educational scenario would require a different mix to meet all learner and institutional needs in terms of curriculum and content.

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. *CyberSurfiver* was designed to include individual assignments that would strengthen learner's technical capabilities. In this thesis, *technical capabilities* refer to those computer and Internet skills that teachers and trainers who intend to work in an online environment will find helpful. Individual assignments focused on these technical skills, such as designing and ftp-ing a basic website, making screen dumps, and downloading free demo applications or products from the Internet. As the module progressed, the nature of the assignments gradually changed to include activities more directly related to the online teaching and learning process.

Most of the active learners experienced a increase in their skills and knowledge as the weeks went by. In a focus group discussion, one of the learners commented:

> *The first week was a big shock, and then after that, as we went along, we got used to the type of things that we had to do. It got easier for me.*

Most of the learners enjoyed the Individual Assignments. Geronimo (Response to Question 4, Test 2), for example, mentioned that he loved the fact that the assignments forced him to search the Internet:

I found more exciting stuff in these 4 weeks than in 4 years of random internet surfing!!

He also commented on the fact that all the resources on the Internet had to be interpreted and applied in the activities:

Constructivist learning galore!

One question in the survey, scheduled for Week 6, asked the learners to identify which of the individual assignments they found most useful. Many of the responses echoed the response of one learner when he/she wrote:

All of them!
[Anonymous survey response]

One learner summed her/his experience with the individual assignments up with the following comment:

Painful but useful!!!
[Anonymous survey response]

Interestingly enough, the majority of the learners indicated that the assignments in which they firstly had to build their own web sites, and, secondly, add special features such as polls, sound clips, and puzzles, had been the most useful. This was surprising because these assignments were the most technically challenging and were indeed the very ones that had kept learners up into the late hours of the night. The sense of accomplishment and self-worth that these assignments gave learners was of great value.

Many learners enjoyed the FTP exercise, and the Java Script assignment also high on the list of favourites. Only one learner indicated that he/she found it useful to write a publishable article, and two other learners enjoyed reading the materials that were provided to prepare learners for the formal online test. No one indicated that they enjoyed the online test.

The online test was also the individual assignment that generated the most negative feedback. Dan, for example, wrote the following in a *Yahoo Messenger* conversation (28 August 2002):

The worst exam I have EVER written!

He attributed this to the lack of time and the vast number of resources available to them. He also mentioned that he did not really know what to expect – despite careful briefings from my side. I had ensured that they would be familiar with the Quiz tool in *WebCT* by setting up the Immunity Challenge of the previous week as an online quiz. I also wrote fairly extensive notes on what they were expected to prepare, and how the logistics would work.

The nature of the Individual Assignments were designed to inspire learners to continue on the learning path that they had began to pursue in the module. As one learner reported:

> *I found the ongoing search for information most useful. I have a looooooong list of URL's that I want to go back and further investigate.*
> [Anonymous survey response]

Madeline commented in her response to Question 4, Test 2:

> *Within six weeks of this, a lot has been learned in the* [CyberSurfiver] *module. Information has been accessed from different sources on the Internet and different tools have been used. Websites have been designed with all the features, from different sources. Different systems have been used and a lot of hands-on experiences gained.*

As I have already explained, the module was undertaken by learners with varying degrees of knowledge and skill. The diversity of student needs was a consideration in the design of teaching strategies and curricula, and it was envisaged that advanced students would be able to move ahead while others continued to work on the basics. The *CyberSurfiver* module was thus designed with the specific aim of allowing for individual differences as some learners exceeded, and others fell short of, the module's expectations for entry-level skills. As it happened, learners with a strong Internet background used PHP to design their websites, while those learners who were not as advanced were able to set up their sites in one of the many free and WYSIWYG web-hosting services. Some learners felt critical of assignments that highlighted individual differences so clearly. Larissa (Response to Question 1, Test 3) suggested that

> *the first priority is to build a sense of community by starting with well-structured exercises that don't show up individual differences so much.*

Lisandra (Wednesday, 31 July 2002, 07:38) found herself struggling with the assignment that required her to add a sound clip to her website that reflected her experience of the first week on CyberIsland. She cried for help:

> *Can anybody tell me how do I get voice onto a website – do I need to do it before I FTP it to Hagar, or after (I still need to figure out how to do this transfer as well.) HELP!*

On 28 July 2002, 1:19, Catherine once again reiterated the fact that the assignment was regarded as highly challenging by stating:

> *I don't even want to think what my blood pressure is at this moment.*

Catherine (Yahoo Groups, Sunday, 28 July 2002, 10:11) had experienced several technical difficulties the previous evening in setting up her own website. Nevertheless, she still gave her message the subject line: *Ah-h-h-h*. The body of her message stated:

> *My personal website is now more or less working! What a struggle. I am just happy to say that I learnt the most I could out of it, as I received no help from any outside party.*

This message shows that even though many peer support incidents were reported, learners often acquired new skills by themselves. Catherine eventually did really well in this module, and has often commented on the growth that she has experienced as a result of doing this module.

Most learners felt a great sense of accomplishment when they successfully completed an individual assignment. For example, Mabel (WebCT posting, 5 September 2002, 22:54) posted the following message as she attached the final version of her article:

> *I feel GREAT!!!!!!!!!!!!!!*

Geronimo (WebCT posting, 3 September 2002, 15:39) also expressed his emotions:

> *FINISHED AT LAST!!! Here is my article attached as a Word file. Please let me know what you think of it.*

It often happened that learners manage successfully to complete an Individual Assignment in the middle of the night – after struggling for hours and sometimes even for days on end. If they then noticed that I was online at the time, they might send me an instant message in which they would ask me quickly to check whether or not they had got it right. Lisandra (*Yahoo Messenger* Instant Message, Saturday, 27 August 2002) was one of the learners who liked to get immediate feedback:

> *I made a number of changes to my Home Page – if you have time, will you please go and have a look and tell me what you think – does it look better than before?* [Translated]

On another occasion, she asked me to go to her site and assess how she had managed to introduce some JavaScript. I went to have a look, and responded as follows (*Yahoo Messenger*, Tuesday, 20 August 2002):

> *Lisandra, your JavaScript is very cool! And I thought this was the first*

> *time that you tried your hands on a website!* [Translated]

Her obvious joy at having succeeded with this technical challenge was appreciated:

> *Thanks a lot! I must say I am quite chuffed with myself!!* [Partially Translated]

Jasmine and I also discussed her experience with the Puzzle assignment in *Yahoo Messenger* (Tuesday, 20 August 2002). She said that she found it

> *extremely interesting – I enjoy every moment spent on doing these tasks – have never before learnt so much in such a little time!* [Translated]

In her response to Question 4, Test 2, Mabel commented on the strength of the elearning module by stating:

> *I would say that I quite easily managed to upload any paper I have written and it was public for more than the "teacher" to read.*

As learners with limited computer and Internet skills battled with some of the individual assignments, they turned to each other for help, assistance, and support. In line with the ethos of the entire degree and my injunction to "Ask three, then me", learners were dependant on each other and on external resources for answers to their questions. But the reality of the situation was that not all the members of any particular tribe were always able to connect to the Internet synchronously. Some members only had access during working hours, while others only connected after peak hours when the connectivity was much cheaper than in peak hours. This meant that tribal members' access to the Internet often was uncoordinated and when individuals needed timely personal support or help, their partners were not necessarily available.

Learners found that *Yahoo Messenger* (introduced in Week 2) was extremely helpful because they could then see what other course members were online at the same time as they were. The introduction of *Yahoo Messenger* was a boon to those who were struggling in the late hours of the night with their individual assignments, when they needed a shoulder to cry on, or just a friendly response in a dark moment. Learners soon learned to look for support beyond the borders of their tribes, and they tended to connect with those with whom they could hook up synchronously. The community of learners grew stronger as the weeks progressed and this tended to release some of the pressure that had built in tribes where members were in conflict about contact times.

Most of the *CyberSurfiver* learners who completed the module left after the six

weeks with a sense of accomplishment and with experiences of personal growth in many areas. Even though the Individual Assignments were by and large completed individually, it was good to see how supportive the elearning community that evolved during the six weeks had become. The assignments instilled a feeling of achievement, and learners ended the module enriched by what they had learned.

Immunity and Reward Challenges

Because some of the learners who had enrolled for the module had never watched the *Survivor*© reality game, I took great care in the first contact session to explain the different features of the game, including the role of the Immunity and Reward Challenges. But I assume that some learners must have experienced an information overload because not all of them understood the role of these challenges either in the context of the game or in their own learning process. I was therefore pleased to read Larissa's response to Question 3, Test 3, which noted that in *CyberSurfiver*

> *games were played and constructed, not so much to learn educational content, but to familiarise ourselves with the web, downloading of files, and being creative.*

The main purpose of these challenges was to include an element of fun and light-hearted competition. But not everyone enjoyed the gaming nature of the module. On Monday, 22 July 2002, 22:08, Roleen expressed her dislike of the game in a *Yahoo Groups* message:

> *I do NOT have the time or the money (remember, I am a teacher) to play an online computer game where eventually, after 30 minutes of being online, the board for the scores are not reachable or offline! Please count me out on this one – or vote me off.*

Some learners sympathised with Roleen's difficulty and expressed similar views. Gabrielle (*Yahoo Groups*, Tuesday, 23 July 2002, 13:46) responded with:

> *If it will make you feel better – I don't really play either. Apparently I now need to start doing it at this ripe age.*

Others, like Catherine (Tuesday, 23 July 2002, 6:41) disagreed rather vehemently:

> *Lighten up, Roleen. How will you be able to write games if you can't play games. Life is not all work and no play for you, I hope.*

Surprisingly, when the time came for the winner of the Immunity Challenge to be announced, Roleen had posted the highest score. Brenda (24 July, 2002, 22:05) replied with some irony:

> *For someone who moaned and groaned about playing a game, you sure have a high score, if not the highest!*

The survey that was completed during Week 6 asked the learners whether they ever took part in the challenges, and to provide me with their impressions about these competitions/games.

Since eleven out of the fifteen learners indicated that they were participating, most learners were actively taking part in the immunity and reward challenges. Six of these learners pointed out that the games were good fun and that they 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*.
> [Anonymous survey response]

Another commented as follows:

> *I experienced it as having fun – I may even use some of these challenges for future online courses – as icebreakers maybe?! I am competitive by nature, which could also be a reason for participating in these challenges.*
> [Asynchronous survey response]

Further comments included:

> *They are good mind teasers and are challenging, refreshing and encouraging.*
> [Asynchronous survey response]

One learner mentioned that he/she took part in the immunity and reward challenges, but only after overcoming his/her own insecurities about taking part.

> *That alone was quite an accomplishment for myself at that stage.*
> [Asynchronous survey response]

One learner commented that he/she did take part, but stated:

> *At the time that the question was put, I was offline. After a few people answered the question, I lost interest because everyone knew the answer by that time.* [Asynchronous survey response]

One of the four learners indicating that he/she did not take part, and listed time constraints as the reason, while another asserted that he/she was not competitive by

nature and thus not motivated by this type of activity. Because of these time constraints, some learners *cheated* in the sense that they got external help in order to achieve high scores:

> *I also asked my kids to show me how to play the game and to play on my behalf when I realised that I did not have the time to keep on playing a game while I had a hundred other things to finish.*

Another learner (a Focus group comment) also confessed to using her family as a support system:

> *I got – again – support from my daughter, but because she enjoyed it. What do you call it when you can get immunity? You had to download a game for example, and I didn't even want to do it, but because she was interested in it, she did it, and she showed me how to do it.*

The Immunity Challenges in the television *Survivor*© show were held so that one player could obtain immunity (exemption) from the next round of votes. A person with "immunity" cannot be voted off, and thus remains in the running for the Grand Prize for yet another week. In *CyberSurfiver*, the same principle applied. The immunity challenges were meant to be fun activities by means of which the learners could acquire immunity. The challenges were not compulsory activities. They were meant to be enjoyable activities that might get one the coveted weekly exemption (immunity) from being voted off. They were also designed to be a break from the other more serious and demanding tasks. The Immunity Challenges were also designed to provide learners with a range of examples of various practical features that are available on the Internet (see also chapter 4).

> *Download a free Demo version of Typingmaster 2002. Type for 2 minutes. Make a screen dump of your results and e-mail it to ELearn2002.*

With this challenge, for example, I hoped to gain an idea of each learner's ability to type on a keyboard because I had planned a written electronic test for the following week, in which a number of open-ended questions would be asked. I planned to use the results of this test to guide me in allocating time for the test. As it turned out, the results were unreliable because many learners did not take the test themselves but delegated members of their families to do it because they had better typing skills.

I also wanted to expose them to the ease with which a program such as *Typingmaster 2002* can be downloaded. Downloading seemed to be viewed as an advanced skill by some of the less experienced learners. I

also wanted those who had not succeeded in submitting evidence of their scores on the previous occasion to have another opportunity to practise this skill.

I furthermore wanted the learners to become aware of the importance of typing skills in an online course such as ours, as a lack of this type of skills may inhibit participation and limit performance (Distance Learning n.d.).

> *Complete the Immunity quiz in WebCT. The person with the fastest completion time, and a 100 % score, will win Immunity this time round.*

The aim of this Immunity Challenge was to provide learners with the opportunity to gain experience in completing a test online prior to the formal online assessment that was going to take place the following week. I wanted learners to become comfortable with the various types of questions available, and with the interface of the *WebCT* quiz tool. They also needed to realise that the test was only available for a limited period. I hoped that once they had been exposed to these skills as part of an Immunity Challenge, the anxiety they felt in anticipating the test might be mitigated.

The winner of the challenge would be the person with the best score in the shortest completion time. Warren (*WebCT* Posting, Monday, 19 August 2002, 09:20) realised the importance of reading the instructions from his experience in this challenge:

> *It seems that the test allows for one attempt only. Only after I "Finished" my test I realized that time was a factor – my mistake (I must learn to read the instructions first!!)*

In a *Yahoo Messenger* conversation (Wednesday, 21 August 2002), Dan asked about this challenge:

> *Just received some mail about a test that Lisandra completed in 2:47. What was this?*

When I told him that it was the Immunity Challenge for Week 5, he stated:

> *Lisandra's making a habit of this ... I guess I missed this ... yep,, I forgot to check webCT* [...] *Don't think I've actually really tried one of your immunity thingies ... games aren't my strong point!*

It is interesting though to note that Dan made every possible effort to partake in the Reward Challenges when the questions asked were of a more academic nature.

> *Play the Photo Shoot: Africa game online. Post evidence of your highest score to Yahoo Groups.*

This particular Immunity Challenge was intended to expose learners to the type of games that are available online. As many of them were by their own admission not themselves game players, I wanted them to experience what it was like to play this type of game. Many younger people are addicted to playing electronic games, and I wanted them to understand the power that these games have over younger people by getting them to play with the intention of getting a high enough score to win the Immunity Challenge. As it turned out, many of them experienced the addictive effect rather strongly because they spent disproportionate amounts of time trying to improve their performances. Others did not become "hooked" and instead became rather frustrated because they are not by nature motivated by competitive games.

Another of my aims was to stimulate creative thinking patterns in learners. Because they were required to submit proof of their highest scores, they had to work out a way in which to capture the score on the screen and to share this evidence with the rest of us. While some learners displayed limited computer-user skills, they had no prior experience in, for example, making screen dumps. Even though this may seem to experienced computer users to be a simple task, those to whom this skill was unfamiliar found it to be extremely challenging. Learners devised the most elaborate ideas for achieving this end. One even hit upon the bizarre (but obviously desperate) solution of borrowing a digital camera and photographing the screen.

Such opportunities for incidental learning were intentionally built into the module, mostly as part of the Immunity Challenges. As the facilitator, I felt that there are many simple skills, such as making screen dumps, or downloading a demo program from the web, that would eventually be useful to learners if they ever end up having to present online courses themselves.

The Photo Shoot: Africa Immunity Challenge was posted during the first chaotic week. As the learners had not yet grasped the nature of these challenges, and did not know that there were other far more important assignments waiting for them in *Yahoo Groups*, they spent a disproportionate amount of time on this activity. My intention was never for learners to spend more than an hour or two on the game. It was therefore disturbing for me to realise how much time learners had spent on this activity.

With hindsight it became clear to me that the fact that the majority of the learners did not know that the *real* assignments were posted in *Yahoo Groups* was the source of this error of judgement on their part. While I posted the assignments to the virtual classroom in *Yahoo Groups*, I deliberately kept the Reward and Immunity Challenges separate because although they were part

of the game, they were not integral to the explicit outcomes of the module on which learners were going to be assessed. Although I obviously placed a high value on incidental learning and the accompanying development of basic computer skills, I never intended these challenges to be graded for marks.

This misunderstanding was highlighted by Jasmine (*Yahoo Groups*, Wednesday, 24 July 2002, 05:52), who wrote:

> *I spend all the time trying to stay connected, playing the game, not realising there are other things to do.*

Samantha (*Yahoo Groups*, Tuesday, 23 July 2002, 18:42) also focussed too much on the immunity challenge instead of the tribal and individual assignments:

> *I tried the photo-shoot game* [*Survivor©*] *and I'm still trying to figure out how to register @ least the decent score.*

Samantha wrote 19 messages throughout the 7 weeks during which the module ran. Of these 19 messages, 7 were related to her frustrations in playing the game. It thus became clear to me that many of the learners had misunderstood the purpose of these challenges and, as a result, had spent far too much time on playing the game.

I was also interested to see how uninformed and inexperienced learners were when it came to playing electronic games. I added a comment to the challenge that stated that it would be nice if someone could get their name on the Top 20 scoreboard of the game. In most computer-based games, you get a score at the end of the game that indicates your position in relation to previous players. In most cases, people who make it among the Top 20 scorers are those with extensive experience in playing the game. After having played for hours on end, one may become skilled enough to achieve a high enough score to qualify for a position on the Top 20 list. But this seldom happens to first-time players whose scores (understandably) would usually be comparatively low.

The fact that I added the comment about wondering if anyone in the course would be able to get his or her name on the Top 20 list was therefore almost an aside of little importance, and I had absolutely no intention of persuading any learner to try to make this happen at all costs. I never really expected that any of the learners would have the necessary skill – or indeed the time to get up among the Top 20 scorers. But my comment unfortunately fired a number of learners with a burning desire to get their scores registered even though they did not really fully understand how these scores worked. Because they were playing the game for the first time, and were thus not

particularly skilled, they never attained a sufficiently high score. And so the computer never prompted them to enter their names or initials on the game's Top 20 scoreboard.

Brenda (*Yahoo Groups*, Monday, 22 July 2002, 22:16) was one of the first to complain about the Top 20 list:

> *I played the game – mainly because it was the easiest part. I struggle to get the game's Top 20 list "active". It seems as though the link is not working. Will someone please tell me how to do it. "Help" did not help!*

Warren (*Yahoo Groups*, Tuesday, 23 July 2002, 14:13) soon followed with:

> *It does not seem possible to record a high score.*

Samantha (*Yahoo Groups*, Wednesday, 24 July 2002, 08:28) also asked for help:

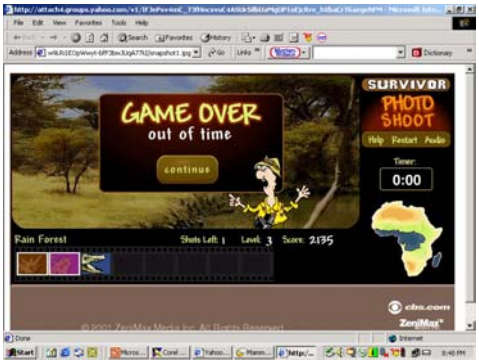
> *I tried to play the game photoshoot, but the problem is it's unable to register the highest score. It tells me reset/retry all the time and CONTINUE which restarts a game.... What could I BE DOING WRONG? What is the best & convenient way of sending the score?*

Earlier that morning (at 07:07), she asked her Sotho friends in particular:

> *How did you guys find it with all those distracters running around confusing our hunting skills?*

I deduced that she had played the game repeatedly between 07:07 and 08:28, and was trying to register her score as proof. Roleen was also perplexed by the task as she thought that one is not allowed to register a high score on the page that hosts the game. She eventually figured out a way to communicate her score and attached a screen dump in the form of a 'jpeg' picture (Figure 14).

Figure 14: Example of 'Evidence'



Mabel (*Yahoo Groups*, Wednesday, 24 July 2002, 22:01) was completely overwhelmed by the large number of unexpected e-mails, and missed the one that stated what the purpose of the photo shoot game was:

> *When I open my Outlook again this morning, I was shocked to see 150 mails!!! In short I need our help. Could you please tell me what is this game that I see in several e-mails? I went through the Planning document for this week, yet I didn't see this assignment.*

Wegerif (1998) reports on students' comments on the "daunting prospect" of being left behind in reading messages. Learners seemed to prefer to ask for clarification, rather than to go through the mails in their inbox one by one.

On the television show, the prize handed out to the winner of the Reward Challenge was usually quite substantial, given the context. After weeks without a home-cooked meal, seeing a loved one, or a hot shower, these rewards were extremely powerful motivational factors.

In our *CyberSurfiver* game, the rewards were by comparison rather insignificant. They were in fact of such little value (being a somewhat inane and symbolic pictorial attachment) that I anticipated very little enthusiasm for the rewards. The reward for this type of challenge was usually a picture attachment, depicting a mug of coffee, a slice of cake, or a bottle of beer. This proved to be an unfounded fear, as the learners seem to enjoy the silliness of the pictures, and competed fiercely in order to be in the running for this prize. As Geronimo's response (*WebCT* posting, Tuesday, 13 August 2002, 19:54) shows:

> *Could not resist the reward!!*

He then continued to post an elaborate response to the reward question that was asked. Approximately an hour later (21:06), Dan demonstrated the value of intangible, intrinsic award and responded with his own explanation to the question, starting his posting with

> *Drat... Geronimo got to it before me!*

Geronimo then promptly responded (*WebCT* posting, Wednesday, 15 August 2002, 11:03) with a tongue-in-cheek apology:

> *Sorry Dan! I have to try to win something after my dismal performance as a typer!!*

He was obviously referring to the Immunity Challenge in which the learners had been required to download a typing tutor and complete a two-minute typing test.

The nature of the Reward Challenges was usually closely related to the topics addressed in the Tribal and Individual assignments. At times these challenges addressed issues that puzzled some of the learners. For example:

> *What is a bulletin board thread? How can one expand or collapse a thread in WebCT?*

This challenge was intended to make learner aware of the terminology used in asynchronous communication, and its purpose was to make learners aware of the fact that they needed to click on the blue triangle next to a bulletin board message in WebCT in order to expand on or collapse the thread. As many of the learners were not familiar with WebCT's bulletin board features, I wanted to make them aware of its functionalities by using the reward challenge as a fun instrument.

> *Who can tell us what the word "cache" means? Why are files sometimes stored in the cache? Why would one sometimes wish to bypass the cache?*

By this time I had become aware of the fact that some learners were not aware of new documentation that had been uploaded to WebCT. As I had posted it there myself, and had tested it from a learner's point of view, I was sure that it exhibited no technical problems of my making. But as learners began to complain that they weren't able to *see* the new documents, I realised that their Internet settings had been up incorrectly. This reward challenge provided me with the opportunity to make them aware of the importance of setting up their browsers to check for newer versions of a page every time they try to access a page.

> *Explain the differences between synchronous and asynchronous communication.*

Many learners requested additional information about the new terminology they were encountering as they progressed through the module. As I often referred to synchronous and asynchronous communication in my postings, I wanted be sure that everyone understood the two concepts in the same way.

> *Explain what an IP address is. How do you know what your IP address is at any given time?*

One of the assignments required learners to communicate synchronously with each other by using NetMeeting. As we preferred not to have their contact details listed publicly on the Microsoft servers, learners would have to connect to each other by using the IP addresses of the computers concerned. As such, they needed to know what an IP address was, and how they could find out what their IP address was.

Some learners did not seem to grasp the purpose of these Reward challenges. They did not make the link between what they were learning and what they were asked in the challenges. One learner reported his/her experience in this regard in the focus group discussion:

> *I felt very stressed during that time period, so the moment Linda asked questions about – she just threw the question: what is asynchronous learning? I was just like quickly look it up and sending it through, so that I've done that part. I now need to carry on. That's maybe something negative, so, because I didn't really go into thinking about those types of questions, because of the time constraints that was placed on us.*

Although these Immunity and Reward Challenges were mostly well received by the learners, many of them did not understand how they fitted into their learning about elearning. In future designs of this module, care will be taken to address this issue in particular.

Voting

In the *Survivor*© reality game on television, the players conferred among themselves and built alliances in order to get powerful opponents voted off. The focus in the reality game was to get rid of any other member who was seen as a threat in the race towards the Grand Prize. In our game, the strongest learners all remained in the game until the very end. On CyberIsland, a high premise was placed on *active* participation and so learners tended to vote off those members who failed to communicate regularly and to produce their fair share of the work. It seems that a high level of commitment, good quality contributions, regular availability online, and/or strong computer/Internet skills were the criteria that ensured learners a safe place in their various tribes. As one learner summed it up:

> *Interesting to note that in the real game the strong ones fell first, and here the weaker ones got trodden on!*
> [Anonymous survey response]

Another person (Response to Anonymous Survey) stated:

> *I did not like voting people off who did their share of the work!*

He/she continued nevertheless to say that it was

> *nice getting rid of people who did nothing!*

When asked in the survey (Week 6) whether they had ever been voted off, nine learners

indicated that they had. In the follow-up question about the influence that being voted off had had on their learning process, three responded by saying that it had influenced them positively and another three said that it had influenced them negatively. The remaining three learners suggested that their learning had not been influenced in any way by the fact that they had been voted off. One of the comments in the Survey read:

> *I was voted off right in the beginning, which was no surprise, considering my lack of input. I did miss the sympathetic mail from one of my tribal mates from whom I had learned a great deal up to that point.*
> [Anonymous survey response]

One of the learners who indicated that he/she had been voted off indicated that it may have had a positive affect on his/her learning:

> *I felt much more relaxed and started to explore areas not previously done. I also had time to reflect on what I have really learned and what was lacking.* [Anonymous survey response]

Another learner voted *herself* off and

> *asked the others to do so too due to challenges experience when I picked up problems with hardware and had to format my hard drive. I deserved to be voted off and it is not affecting me negatively at all.*

One of the learners complained that being voted off had a negative influence on his/her learning process:

> *After being voted off, the tribe I was in was inactive* [and] *as a result it affected my learning process because all the remaining group tasks were not effectively done and I didn't gain much on them.*

In another anonymous survey response, another learner made a similar comment:

> *The negative part* [of the *Survivor©* game] *was the voting out of members. The whole process affected my learning process as I was voted out and put in a tribe that did not function and the same time felt demotivated and rejected by my group. Since then I did not gain much whereas other members were learning and gaining more experiences.*

> *I had to do some of the group tasks alone, not knowing whether I'm on the right track or not, not knowing how to get them evaluated and get feedback on them. This was a bit demoralizing. Maybe the Survivor metaphor was introduced too early in the module when everything was still new, and voting being done as early as the first week which left others out too early.*

One learner commented that while the voting process as such did not influence his/her learning, he/she added:

> *I have been voted off in the last round. I knew that it was my turn to go with the result that it was not a problem or a blow to my very fragile ego. I did not participate as I was suppose to due to a heavy workload and flu and deserved to go.*

She/she continued:

> *I think that the whole voting* [process] *was a stupid idea and very often I did not vote. Many of the people in my original tribe never even tried to participate. It was therefore a useless case from the start. During the first week I tried to vote myself off so that I could start a new tribe.*

Initially most of the active members did make use of their voting rights on the last day of each *CyberSurfiver* week. From Week 3 however there was a definite decline in the number of votes that were logged. In Week 5, I actively had to encourage the learners to go to the voting stations (*WebCT* posting, Tuesday, 20 August 2002, 22:55):

> *Could I ask you to please all use your votes this week?! And don't forget to assess your mates' collaboration efforts!*

The next week I posted a similar reminder on the *WebCT* bulletin board (Tuesday, 27 August 2002, 21:48)

> *NB! This is your last opportunity to vote*. [...] *I recognise the fact that this week's voting is going to be really difficult for you guys. Just a reminder though: If no one votes, the computer will randomly select someone by midnight to throw off. It may be you!*

I also reminded them of the following:

> *On Thursday (before 18:00), you need to vote for the one person you would like to become the SOLE SURFIVER of the game. Who do you think most deserves a weekend away with family/friends?*

In a *Yahoo Messenger* discussion (Tuesday, 20 August 2002), Roleen expressed her feelings about being voted off (after the new tribes had been formed):

> *At the moment I feel like I won't really mind going off at this stage, and there are enough others who knows what to do.* [Translated]

Not all learners regarded the voting activity favourably. While some disliked the idea right from the beginning, others indicated that they wanted to be voted off a particular tribe because they had begun to experience conflict 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 to refrain from voting and risk being voted off themselves.

> *It was like a competition. Because I'm one of those people: when there's something up for grabs, I really want to do well, and hope that maybe in the end, maybe you'll just soul survive and win the game. So, in the beginning I thought that the guys or people who know, or who don't know those things, are going to be voted off in the first week or two. But some way I survived, and in the end when there were only what four, five, six left, then you – maybe it gets close – so maybe you can wait.*
> [Anonymous focus group comment]

On Thursday evening, 15 August 2002, 20:36, I reminded all learners of the importance of voting because the computer would randomly selected people to be voted off if there was no conclusive vote against one of the learners in a particular tribe. It was therefore rather important to vote for someone else if a learner hoped to remain in running for the Grand Prize.

On Thursday, 15 August 2002, 22:31, Geronimo and I had an interesting conversation via *Yahoo Messenger*. I initiated the conversation after I had noted that no one from his tribe had voted. Midnight was the cut-off time for voting, and as I wanted to shuffle the remaining Surfivers on the following day, it was rather important that everyone vote in time. My concern was that they were perhaps experiencing technical difficulties.

> *Are you able to access the voting station, or are you having problems?*
> [Translated]

Geronimo responded by saying that there were only three members left in his tribe and that he did not want to vote either of the other two off. I reminded him that the computer would randomly select one of

them to vote off if he did not cast his own vote. After he agreed to go and vote, I requested him to remind the others to do so as well.

It was almost an hour later (23:18) that Geronimo initiated another discussion over *Yahoo Messenger* with the following message:

> *I am really not sure about the voting! I am going to be the only one that votes!* [Translated]

We discussed the fact that because he now reminded the others to go and vote and that, by doing that, they would know that he was the only one who that voted, and that this had deprived him of the anonymity promised by the system. After reminding him of the Grand Prize, he said:

> *Yes, maybe I owe this to my wife!!:)* [...] *I will flip a coin for the 2 girls to see who needs to go!* [Translated]

Minutes before midnight, I received a short message from him, stating that he had actually taken the plunge and voted – just in time. Geronimo eventually went ahead to become the sole *CyberSurfiver* at the end of Week 6, and took his wife and family on a lovely weekend to a nearby resort.

In a game such as *CyberSurfiver* some things cannot be planned, anticipated or controlled. I certainly expected the learners to strategise and vote off their strongest opponents first. It soon became clear however that this was not going to be the case. Because this unfortunately had not been anticipated, the game structure did not have a built-in support system for those weaker learners who, unexpectedly, found themselves huddled in Tribe 5. In one sense, the game turned out to be an exercise in the survival of the fittest, and it left the weaker learners adrift without any obvious means of participating meaningfully and getting ahead.

The Jury

In the *Survivor*© reality show, the members who were voted of in the latter part of the game were allowed to sit on a jury. The votes of the members of the jury also counted towards the selection of the final *Survivor*© who won the $1-million dollar prize money.

In *CyberSurfiver*, however, all learners who were still active were allowed to vote in the final round. On the last day of the module, all learners were invited to join the "jury" and to cast their vote for one of the remaining five *CyberSurfivers*.

Tribal councils

In the initial introductory letter (posted to *Yahoo Groups*, Thursday, 18 July 2002), I mentioned that I would like the groups to set up Tribal Councils who could reflect on their progress with regard to how things had turned out, on how it felt working together in cyberspace, on how they had experienced the group cohesion, and so forth, on a regular basis. I framed the following questions to guide reflection in these sessions:

- *How well did the tribe function this week?*
- *One positive comment and one negative one about your impression of the work done in the previous week.*
- *What things were done well?*
- *What can be improved?*

Each tribe was supposed to take responsibility for organising a synchronous tribal council session during the course of the week with myself included as part of the team. As soon as the module started, it became clear, however, that the ideal of a weekly tribal council meeting for each tribe individually would be difficult to realise. As one of the learners commented in the focus group discussion:

> *I think the work was a little bit too much, so there were things in the game that we were unable to do, for instance, I don't know about the other tribes, but the tribal council that we were supposed to hold, nobody did that.*

I revisited the design for the module and settled for three Tribal Council sessions with the group as a whole: one at the beginning, one in the middle, and, finally, one with which to close the module.

The first face-to-face tribal council was held at the end of Week 1 (Thursday evening, 25 July 2002). As the learners were at that time confused and uncertain about the realities of the game and how the module functioned, we needed a contact session in order to create an environment that would be conducive to learning.

The second tribal council was held in the middle of the module (Wednesday evening, 7 August 2002), and used the *InterWise* session to get everyone online synchronously. After the learners had had an opportunity to present their mini-lectures by means of the *InterWise* system, we started the tribal council meeting with a round-table discussion about the experiences of the learners up to that point.

Geronimo (Response to Question 3, Test 3) later remarked that theses tribal councils allowed time for reflection and feedback, and he wrote:

> *Good, online "gripe" sessions and e-mails!*

The final tribal council was held on Thursday evening, 29 August 2002, at the debriefing session where the Dean of the Faculty announced who the sole *CyberSurfiver* was. The debriefing went well, and learners were elated because the module had been completed. The overall atmosphere was nevertheless constructive and friendly and learners were eager to be able to – at last – to share their experiences of the last six weeks in person with myself and with the rest of the groups.

Grand prize

After negotiating the agreement of the Dean of the Faculty, the leader of the course, Professor J.C. Cronjé managed to offer the *Sole CyberSurfiver* a weekend away for six people at a nearby holiday resort as the Grand Prize. Although learners were informed that there would be a substantial prize for the sole surviving learner after the module had been completed, the nature of the Grand Prize was only announced halfway through the module. Because of this, the motivation of some learners was not influenced either positively or negatively. One learner reported 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*!
> [Anonymous survey response]

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 works because there is some prize at the end of the game.*
> [Anonymous survey response]

Two comments struck me as particularly dismissive:

> *Maybe if it was a trip for two to France or Italy it would have had a significant influence.*
> [Anonymous survey response]

> *Not really – one gets phoned with such a prize quite often.*
> [Anonymous survey response]

Only three learners indicated that they had been motivated to work even harder after the announcement because of the nature of the Grand Prize. One of these learners wrote:

> *I worked harder because my wife wanted to divorce me several times and a good weekend will cheer her up*.

Most of the learners indicted that the announcement of the Grand Prize during Week 4 did not really influence their learning processes.

> *It was announced too late to have any influence. I do not know if it would have made any difference in any case. I am not the kind of person that works because there is some prize at the end of the game*

Some of the other comments made anonymously included the following:

> *I felt happy for the winner. Always may the best guy win.*

> *It did not – by that time I was voted off, i.e.* [I was] *not in line for the prize anymore*.

> *No effect, as I was definitely not in the running.*

> *It made no difference at all.*

More positive comments were also forthcoming:

> *Happy for the person who is going to win.*

> *VERY good!*

One learner, whose personal circumstances make it difficult for her/him to travel, commented:

> *I and mine are no good "weekend away people", so if anything, I rather feared winning.*

In a *Yahoo Messenger* discussion (Tuesday, 20 August 2002), Roleen also expressed her feelings about the Grand Prize as follows:

> *I would like a weekend away, don't know when last that happened, but don't know where the time would come from!*

Gabrielle and I discussed who she intended to vote off by the end of the week in a *Yahoo Messenger* conversation on Thursday, 15 August 2002. She mentioned how intense the competition was but how everyone

> *pretend*[ed] *they don't mind!*

In conclusion, it may be said that the Grand Prize certainly had a motivating effect on some of the learners, and that this effect may have been much greater had the nature of the Grand Prize been known at the beginning of the module. It is also true that some learners were not at all motivated by the Grand Prize because their motivation to complete the module successfully had

already been firmly established by other internal drives.

Closure

This chapter explored the intricacies of the group dynamics that resulted from the introduction of the *Survivor*© game elements such as group composition and the effect of the shuffling or regrouping of tribal members into new tribes, the restrictions of isolation as experienced on CyberIsland, various tribal and individual assignments, reward and immunity challenges, the practice of voting, and the incentive provided by the offering of a Grand Prize.

The literature tells us very little about the way in which adults experience learning games in an online environment (Beach 1954; Callois 2001). This chapter explored the various types of interaction and group dynamics, and followed through by examining some of the complexities involved in presenting a learning module by means of a metaphor such as *Survivor*©.

Chapter 7 will explore how the *CyberSurfiver* game elements affected the group dynamics, and the various types of interactions involved in this online module.

Introduction

This chapter deals with the themes and topics that were identified after a careful analysis of the various data sources, and is guided by the following question:

> *How did the CyberSurfiver game elements affect the group dynamics, and the various types of interactions involved in this online module?*

In order to answer this question, this section will focus on the dynamics and interactions in the module as they were embodied in the following themes:

- Learning outcomes and expectations
- Peer support
- Feedback from peers and the facilitator
- Peer assessment
- Interpersonal conflict
- Language issues
- Stress factors
- Time concerns
- Competition
- Humour
- Personal lives
- Synchronous and asynchronous communication
- Costs implications
- Online culture
- Retention rate

This section describes both the frustrations that inhibited learners in the online game and those features and elements that encouraged them and motivated them to continue. I will examine and analyse in some detail the various satisfactions and frustrations that learners experienced during their six weeks on CyberIsland.

Many studies have identified the deficiencies of traditional classrooms. These focus on elements such as levels of personal attention, boredom, and outdated knowledge (Diamond 1997; Gardiner 1997; Handy 1998). Far fewer studies have identified the deficits that are associated with computer-assisted learning.

> Most of what we read or hear about computers in education emphasizes only one aspect, usually the good points, but occasionally the bad, to the exclusion of other points of view (Ragsdale 1988).

Burge (1994) suggests that so few qualitative research studies into computer-assisted learning have been carried out because the intricacies of virtual classroom dynamics are (as yet) little understood.

My purpose in examining the satisfactions and frustrations that learners derived from this game was to observe whether such satisfactions and frustrations significantly

inhibit or enhance their learning opportunities.

Learning outcomes and expectations

As the facilitator of this module, I learned a number of important lessons. One was that one cannot take for granted that all learners hear, read, and internalise everything that one communicates to them as one shares important information. This is as true in an online learning environment as it is in the tradition face-to-face teaching situation.

As I was mentioned above, the module began with a short contact session (Thursday, 18 July 2002), during which the nature of the *Survivor©* metaphor was explained, learners were divided into heterogeneous tribes, and detailed instructions were given to learners about where they might find the *CyberSurfiver: Introduction* document and information about the first week's assignments. I also told them that they would experience at first hand what it is like to be an online learner, and that we would be doing a lot of reflective exercises to ensure that they would be able to relate *their* experiences to what is important to an online facilitator. Some learners struggled with this concept of learning by means of hands-on experience:

> *The first thing that strikes me about this study* [...] *is that we were actually learning about online learning through online learning.*

Because this priority was guiding my research, I was less concerned about the products that they were creating than I were about their reflections on the processes through which they were passing. That a few learners actually understood the focus of this module is shown by this anonymous response to the survey:

> *It was about process, and not the actual content and hard skills, like learning to program in HTML.*

Another learner realised that they were learning not only from those events in the module that went smoothly, but also from those that did not:

> *I think what we were learning about was also, as I said, perhaps what the pitfalls were of online learning.*

All the information they needed to understand how the game worked and what the assignments were about was provided on the Elearn 2002 *Yahoo Groups* service on the very first day that the module became operative. What actually happened though is that most learners had somehow not understood my announcement that these documents were available in *Yahoo Groups*. Others managed only much later to get access to the web-based version of *Yahoo*

Groups. This probably means that they never read through the sections that explained the rationale behind the game and the outcomes that they were expected to reach.

The introductory document strongly emphasises the point that because all the learners were postgraduates, they were expected to carry out a lot of independent and self-motivated study and exploration in this module. The document also explained that both tribal and individual assignments would have to be completed, and that some of the work would be peer-assessed.

It seemed to me, from what I had been able to gauge, that the learners felt that they had understood the approach outlined above. Gabrielle (Response to Question 3, Test 3) emphasised that the learning objectives were made clear at the first face-to-face meeting, and that they were also clearly *implied* by the nature of the subsequent assignments.

> *It was clear that not only the content mattered, and gains in knowledge and computer skills, but also social skills were being tested and developed through the metaphor of a game in which survival of the fittest would be proven.*

Geronimo's response to Question 3, Test 3 indicated that the outcomes for the module were

> *clearly stated and that students knew what was expected of them.*

Others indicated that they had reached at least some of the outcomes that had to be reached:

> *I learnt a great deal about the Internet – what is available (free), how to FTP, etc.*
> [Anonymous survey response]

But Dan (Response to Question 3, Test 3) confirmed that the outcomes of the module were not clear to everyone from the start. He mentioned that

> *the objectives of the course were fairly clear. This was not so from the beginning though, as we were all getting used to the technology and a second face-to-face meeting was needed to clarify things.*

The problems at the start of the module could be ascribed to a number of factors, including the fact that the learners did not hear (in their excitement on that first evening) where and when these two explanatory documents had been uploaded.

Others, like Samantha (Response to Question 4, Test 2), admitted that they battled to understand what was expected. She said that

> *some of us took long to finally get a grasp of expectations or performance.*

I discerned two distinct paradigms of thinking that learners held. There were those who simply wanted to get good results (marks) for the module so that they could to complete the master's degree (particularly if they wanted to complete it with distinction). Some learners went out of their way to let me know how important it was for them to succeed in getting high and measurable results for this module. In response to a Survey question (Week 6), one learner responded as follows:

> *Not happy with the assessment. This mark on this module means a lot to me (working on an average of 80% for all my modules).*

Then there were those who were interested in the topic of elearning and who wanted to know more, and therefore got excited with the prospect of experiencing all the different elements that related to elearning and that were parts of this module. I found it extremely difficult to accept with equanimity many learners' obsessions with marks. I also found it difficult to persuade learners that what they actually *learned* about elearning would be far more valuable to them than a symbol on a piece of paper.

The design of the module (and in fact of everything that I teach) was based on the premise that the learners should exit the learning experience with a high degree of satisfaction that is always a consequence of personal growth in learning. I wanted learners to be able to say

> *This is something that I can now do – something that I could not before this course*
>
> or
>
> *I now understand this so much better than before.*

In spite of these, my personal hopes and ideal, learners confronted me throughout the course with the fact that they were far less interested in going through the process in order to experience a rich learning opportunity than they were in obtaining good marks for their products and outputs.

In a *Yahoo Messenger* conversation (Monday 12 August 2002), Dan and I discussed the reasons why no one had posted their responses to a particular individual assignment. He argued his viewpoint as follows:

> *Just making a point about why no one has posted anything to webct yet ... Everyone is waiting for someone else ... just to be sure their post is better ... Many are too concerned (says he) with marks than with how much they are learning!*

It seems that not only were the learners obsessed with the marks they were going to get for the module, but that there was a strong underlying sense of competition among the learners themselves.

In the focus group conversations, one of the learners commented:

> *We're doing it to get a good mark to be able to get a good job one-day once we've got this.*

Even though I constantly provided feedback and encouragement, some learners were only interested in feedback if it was in the format of a concrete percentage mark.

Most of the learners though, whether they were obsessed with high marks or not, recognised that, even though the controversial methodology of the module may have been open to discussion, they had experienced an intense experience of learning because of this module. In an anonymous focus group response, one of the learners commented:

> *I thought it was the best course that I've done, certainly in a long time, because of what we learnt.*

When I asked them why they had remained active learners until the end, another Focus Group member commented:

> *Because we learnt so much. We learnt a tremendous amount of work. New things.*

Peer support

Many researchers such as Burge (1994) and McIsaac and Gunawardena (1996) assert how important a virtual community is to support students. The lack of learner support in elearning courses is also repeatedly addressed in the literature (Rahm & Reed 1998; Hanna 1998; Koble & Bunler 1997).

Tobin (2001) notes that learners in an elearning course, who fail to engage and build relationships with other learners and the facilitator, are more likely to fail than those who do engage and build such relationships. Larissa (Response to Question 2, Test 3) supported this view by saying:

> *If people feel they will be treated sympathetically by fellow students, they will contribute more freely. If they are not on their own, they will not feel anxious, defensive and*

> *unwilling to take the risks involved in e-learning.*

For this reason, the design of the *CyberSurfiver* module encouraged a strong reliance on other tribal members through elements such as the tribal assignments. But learners not only built strong relationships because of the collaborative tribal assignments. Because the individual assignments were often technically challenging, learners built support networks across tribal boundaries because they needed help from one another.

According to the survey results (Week 6), the peer support that learners got from each other was one of the positive influences of the game that was identified by the learners. Many learners commented that they were positively encouraged and supported by others, often even by those who were in tribes different from their own. Others stated that the forced collaboration affected their learning process positively. Lisandra responded to the question about the strengths and weaknesses of Internet-based learning by stating that the support received during the *CyberSurfiver* learning intervention could be regarded as a strength of the module.

> *There was always somebody (either the peers, or the facilitator) there to assist whenever someone needed assistance. Learners supported each other and this has greatly aided the learning process.*

Evidence of this type of peer support was abundant in this module. Not only did learners provide emotional support by means of positive and supportive feedback on other learners' efforts and attempts, but some also declared themselves willing to support others with technical difficulties. What made this so remarkable is the fact that everyone was working against time and, with the workload being what it was, everyone had a limited time in which to complete his or her own assignments. Dan (*Yahoo Groups,* Monday, 29 July 2002, 23:44) encouraged others to contact him with their technical problems:

> *I am more than happy to help out where I can if anyone is in need of technical assistance with any project. Just send me a mail and I'll help if I can ... any tribe!*

The learners with less previous Internet experience appreciated this offer immensely and, on quite a number of occasions, individual learners would approach him with their technical difficulties. Brenda (*Yahoo Groups*, Wednesday 31 July 2004, 07:38), for example, took Dan up on his offer:

> *My common sense tells me (not sure if I can always trust that) that one should be able to open the Hagar*

> *page and then link to the present site. Dan, is this possible or am I dreaming of something impossible?*

Mabel (*Yahoo Groups*, Tuesday 30 July 2002, 14:58) also followed up on Dan's offer for technical assistance:

> *I need help with my website.... I don't know how to connect the pages to the index.html which is the first "home" page. Can you help?*

Neither Mabel nor Brenda was in Dan's tribe and thus his sincere invitation for support loosened the rigidity of tribal boundaries. In a focus group discussion, the following explanation was given:

> *Something that was really frus... not frustrating, but was just part of the game, is I didn't think we stayed in the tribes as much as we were supposed to.*
>
> *Yes. In other words, we got support from people from the other tribes, and we supported people from other tribes, because they were online at that time when we were online.*
>
> *Because it was frustrating sometimes that you'd ask something of a tribe member, and that tribe member is not online at that time, and then you are just thanking God that the other tribe's members are replying.*

As this particular learner indicated, the tribal members did not remain 'loyal' to their tribal mates alone. They got involved with learners from other tribes as well. The one thing that these learners had in common was the fact that they were available for contact and support at the same time.

> *I must say that was a very positive aspect for me from the way the whole thing worked. That there was sharing, you know, outside ... It* [wasn't about] *the tribes.* [Focus group comment]

Brenda (Response to Question 3, Test 3) also commented on the culture of sharing by saying:

> *There was a culture of sharing knowledge – although at first just between the members of a specific sub-group or tribe. Later on, knowledge was shared with anybody.*

Some learners explicitly requested help while others felt exposed when they had to admit that they were struggling. Lisandra was one of those learners who had a sense of humour and used it when she needed support. On 30 July 2002 at 04:29, she cried out for help by addressing Dan personally and requesting help for two particular problems that she was experiencing. She wrote:

> *This blond definitely needs some assistance with this week's assignment.*

Other learners were on the whole worried about exposing their lack of knowledge publicly. One learner made the following comments in the focus group discussion:

> *I think one feel exposed when you are writing the e-mails and even the letters, because you have to put more thought into what you're doing, because you feel maybe I'm asking a stupid question or I'm just not understanding the problem, so now I'm asking somebody else for the answer. I had a feeling, you're kind of feeling exposed as well.*

Those who had already acquired some degree of success, spontaneously offered their help when they saw others battling with challenges that they had also struggled to overcome. Geronimo (Response to Question 2, Test 3) replied that he highly rated the

> *peer-help and support – learners have the same problems, many times the problems are sorted out by another learner who saw the cry for help and had the same problem previously.*

Catherine (*Yahoo Groups*, Wednesday 24 July 2002, 22:15) and Ted illustrate an interesting phenomenon where even those who indicated that they had limited Internet skills, tried to help when another asked urgently for help:

> *Try again to get to the page by double clicking on the URL below! Maybe you are lucky this time round.*

In reality, Ted needed first to change his *Yahoo Groups* settings in order to obtain access to the web-based course as well as the e-mail version. It was therefore not quite as simple as just double clicking on an URL. But it was the willingness of someone with limited knowledge to support another learner in need that was gratifying. Ted eventually managed to gain access to *Yahoo Groups* on Thursday 25 July 2002.

In another example, Beatrice shared the error messages that she was getting in a message to the group. Jasmine (*Yahoo Groups*, Saturday 27 July 2002, 09:26) replied even though she did not regard herself as a particularly skilful Internet user. Instead she suggested Geronimo as a potential technical source of support:

> *Hi Beatrice, You must yell if you need help. Geronimo is a fundi* [expert] *– he'll sort your problems out in a whizz!*

Geronimo (*Yahoo Groups*, Wednesday 31 July 2002, 02:18) himself later followed up on Beatrice problem by asking:

> *Did you manage to get it right? Let me know, I will help!* [Translated]

It was not only those who needed help that benefited from the peer support activities. According to Geronimo (Response to Question 4, Test 2), the peer-supported learning helped him in his own understanding of the topics under discussion:

> *We had to help each other, and in helping the problems became clearer.*

Tu and Corry (2002) define a learning community as:

> a common place where people learn through group activity to define problems affecting them, to decide upon a solution and to act to achieve the solution.

Without being consciously aware of it at the time, the *CyberSurfiver* learners started to build a strong elearning community. In her response to Question 3, Test 3, Catherine wrote:

> *Although a number of students were quite removed from their comfort zones, the challenges were met and an e-learning community resulted that will exist long after the information gained from the course has been integrated.*

Dan (Response to Question 2, Test 3) also emphasised the importance of

> *collaboration and peer support through debate and online interaction. Members of the community who need support have a forum, they have access to the collective support of the entire community, something which might also not be possible within a conventional community.*

Everyone contributed to this community wherever they were able to. Brian (in response to Question 4, Test 2) responded by saying:

> *Resources and ideas were shared across the spectrum. Some people knew about LMS, some about synchronous tools, others about e-testing. Everyone in this course helped each other with what they knew best.*

The support was not always simply technical or academic. When time became limited and Geronimo desperately cried out for the contact details of his tribal members, Jasmine responded by sending him her own

list of e-mail addresses that she had compiled. The intention was clear: everyone suffered and thus everyone understood what the others were going through. This mutual willingness to help and support others in similar situations was conspicuous on many occasions.

Some learners felt that this type of communal support was extremely helpful, and indicated that they felt that those who excluded themselves from the community by not participating actively, were missing a very worthwhile learning experience. An anonymous survey response said:

> *The fact that Dan and I worked very well together contributed to my learning – especially on the technical side of things! This made up for the fact that the other members of our tribe did not contribute to our learning – they are the ones that missed out!*

One learner was also less sympathetic with those who did not stay with the game. He/she felt that, in general, too many learners were

> *spending time to give others a hand, instead of just voting them off* – [that] *would have been more ethical.*
> [Anonymous survey response]

The effectiveness of the learning community as a support system was commented on in a response from one of the learners. In it, he/she indicated that it was because of peer support that he/she had been able to remain active in the module. The following comment was made in the anonymous survey when the workload and lack of participation from tribal members nearly overwhelmed one of the learners:

> *Members from other teams were very supportive and that kept me going.*

In the anonymous survey, one learner commented on the influence of the *Survivor*© metaphor by stating:

> *The positive part was the help and collaboration of other group members.*

There were those who did not experience the elearning community quite as positively. Mabel for example wrote out in her response to Question 4, Test 2:

> *I am not quite sure that it fulfilled all the social needs, and as humans the need of a social environment is important. At our course we did try to build a community, yet it isn't a natural* [community] *and it acted as some thing that is not natural.*

This need for social contact also became even more evident as learners started to 'break the rules' and began to use other means of communication such as personal visits and telephone calls. Some learners insisted that the main medium for communication was the web-based applications. Geronimo (Response to Question 3, Test 3) noted:

> *Guidance and feedback were constantly given by using e-mail messages and Yahoo Messenger.*

Others indicated that they had made rather extensive use of the 'forbidden' means of communication. Dan responded (*Yahoo Groups*, Wednesday 31 July 2002, 07:32) by first apologising for not replying earlier and then by explaining the procedures that Lisandra was uncertain of in a systematic manner. He ended his message by writing:

> *Please phone me if needs be on 082 xxxxxxx if you get desperate.*

This is a good example of the lengths that learners went to in order to support one another and to help others also to be successful. Even though learners were requested not to make use of communication mediums other than the Internet, the majority felt it was more important to support one another and to help each other to succeed than to follow to the letter the rules of the game as they had been agreed upon at the beginning of the module. In this example, Dan explicitly stated his willingness to support Lisandra – even over the telephone – should the need arise.

One learner, though, asserted that most contacts did indeed take place by means of the online medium, and that the other types of contact were limited:

> *Well, I don't know what everybody did in the dark, but what I know with my knowledge is that the breaking of the rules is maybe twenty percent of the time. Not that we break the rules all the time, we chat all the time on the telephone or whatever. It's just sometimes if you had a problem.*

In an attempt to justify this type of illicit contact, one learner wrote:

> *I just want to say* [that] *a lot of the talking if we did talk, was more in a supportive way than in a technical, academic...*

It is thus clear that learners experienced a need for *both* emotional and technical support and that while they used the web-based applications for the latter, they often satisfied their need for emotional support by contacting other learners in person.

Struggling with the same problems certainly compelled the learners to become more involved with each other than they would have been had they not needed support from one another. On a more personal note, Brenda (31 July 2002, 07:38) remembered that one of the other learners, Dan, had just recently been offered a new job and was due to start at his new workplace the next day:

> *Is it not your fist day in the new job tomorrow? If it is, good luck*!

What makes this kind of gesture exceptional is the fact that all these learners were under immense pressure and were, in addition, battling to meet deadlines. Nonetheless Brenda remembered that this would be an important day for Dan. It is even more remarkable because Brenda and Dan were not even in the same tribe. This is just one example of how the learners became more than just simply fellow learners. *CyberSurfiver* managed to bring people closer to each other and to create an atmosphere of mutual care and sympathy in an environment (the online environment) that is can be fairly harsh and even clinical.

Other learner emotional needs that became obvious in this module was the need for recognition, acknowledgement, and positive feedback. Learners often completed an assignment and then posted a message in which they asked members of the group to have a look at it and then give them some feedback. Usually the other learners replied almost immediately with supportive comments. Beatrice (*Yahoo Groups*, Thursday 25 July 2002, 01:16) responded to Geronimo's attempt at a tribal website and his request for feedback by stating

> *I've accessed the website and am very impressed. Thanks.*

Mabel (*Yahoo Groups*, Thursday 25 July 2002, 11:18) responded as well with:

> *...it looks o.k. well done*!

Brenda (*Yahoo Groups*, Wednesday 24 July 2002, 10:27) responded (presumably with ironic humour) to Dan's request for comments on their very special PHP site:

> *It looks great Dan!! Do you have the time to do a couple more sites?*

Apart from the support that learners got from their peers, they also relied on other people (outsiders) for support and understanding. It became evident that most learners also had other sources of support to sustain them. Some learners indicated that they relied heavily on their families and spouses – as the following quotation demonstrates:

> *I would go so far to say if you didn't have the support of your family, you*

> *wouldn't be able to complete this. My wife never – I must say this – my wife never complained. Only at the end did she complain about the telephone account, but she understood that... She didn't complain that I worked at night, until ... one o'clock, two o'clock in the morning* [Anonymous survey response].

Others were not lucky enough to have support at home and so they had to encourage themselves.

> *I want to say I did not have so much support. My only support was my internal motivation. That was my only support.* [Anonymous survey response]

Another learner indicated that he/she also had no support at home, and relied on colleagues for this kind of support:

> *My sole support came just purely from my colleagues. From the people I studied with. Nothing and nobody at home knows anything.* [Anonymous survey response]

Moore (2001) notes that facilitators in an online learning environment should allow learner-to-learner interaction to take place with minimal intervention from the facilitator. In *CyberSurfiver*, I strongly encouraged this type of interaction and refrained from taking part in discussions while learners were discussing issues among themselves. But I often publicly interacted with both individuals and tribes, although much of my public communication had to do with administrative arrangements or conferred general praise and gave feedback, as my contribution below demonstrates. On Friday, 16 August 2002, 22:13 I commented:

> *Must say I am soo impressed with you guys. Your willingness to help each other and to share your knowledge is great and shows that we have indeed created a lively, caring online learning community! Well done!*

To ensure that the learners made use of their collective knowledge rather than my expertise, I encouraged them first always to try to solve their problems by asking for help from their fellow learners. Even though I remained available as a final resort, I did not volunteer help unless it was specifically requested. I only intervened if I saw that learners had totally missing the mark and were wasting their time in futile exchanges. Larissa confirms this in her response to Question 4, Test 2:

> *In* [the *CyberSurfiver* module] *we helped each other a lot in learning to do things. Sometimes you had to wait a bit, but help was always on*

> *hand, and Linda eventually sorted things out.*

Mabel (Response to Question 3, Test 3) replied that apart from the support from her peers, she recognised my role as the facilitator in keeping discussions moving:

> *The students work in collaborative groups and it must* [have been] *an incredible workload to monitor, encourage, challenge, provoke the students in all the groups and to keep them discussing and focusing on the issues*.

Gabrielle also shared her feelings about my supportive role in a *Yahoo Messenger* conversation on Saturday 31 August 2002:

> *Thanks for your patience, you certainly supported us throughout and we got to know you as someone who is not interested in marks, but in what students learn. I learnt LOTS – also rediscovered some interesting facets of myself.* [Translated]

Some learners were so overwhelmed by the frustrations they experienced in connection with their own technology deficits and/or lack of computer and Internet skills that they gave up and never became active again. Hara and Kling (1999) state that if students can manage to cope with their frustrations, the learning experience might not be perceived as unconstructive. The very fact that learners supported each other by openly sharing with their frustrations with their classmates eventually added (for those who did not give up) to the richness of the learning experience. It is my opinion that without this kind of mutual support, *none* of the *CyberSurfiver* learners would have completed the module.

In the focus group, some learners were critical of the fact that learners in Tribe 5 had not being given alternative modes of support. But one learner emphasised the importance of being a self-directed learner. He/she felt that those learners who were struggling only had to *ask* for help because he/she, and others, had openly declared that they would make themselves available for supporting others.

> *If one of them asked me about the HTML, I would have given them* [information], *because I didn't know HTML. I didn't go to the course. I found that Netscape has a composer that works like Microsoft word. And you work in Netscape composer, and you save it on your HTML file, and you put it on your composer, and it looks wonderful.*

It was clear that those learners in the *CyberSurfiver* module who engaged with others and built up relationships with other learners and the facilitator had access to a

critical network of support while those who failed to connect with others suffered and failed to experience the richness that an elearning community can offer.

Feedback

In a web-based distance education situation, where learners do not see each other or their facilitators, the absence of physical cues can lead to various degrees of frustration among learners (Hara & Kling 1999). Kuehn (1994), Harasim (1987), and McIsaac and Gunawardena (1996) caution that a lack of communication cues is a great disadvantage in computer-mediated communication because nonverbal clues, such as gestures and facial expressions, are absent from the medium. It is therefore crucial to provide feedback and encouragement to students who are struggling in this environment (Bonk & Cummings 1998). McIsaac and Gunawardena (1996) emphasise the importance of feedback when they say that

> the concept of interaction is fundamental to the effectiveness of distance education programs as well as traditional ones.

The literature is full of research that indicates the importance of *immediate* feedback (Thurston & Reynolds n.d.; McIsaac & Gunawardena 1996; Bonk & Cummings 1998). The behaviour of the learners who took part in this module also affirmed the validity of this recommendation. Both peer feedback and facilitator feedback were regarded as vital for survival.

When referring to getting feedback from her peers, Larissa (Response to Question 3, Test 3) noted:

> *Feedback came from not being voted off, and from being re-invited to join other tribes, motivational and congratulatory e-mails from other students and the facilitator…*

She also commented on the fact that she enjoyed the sense of accomplishment that she derived from completing an assignment.

> *Feedback was also achieved by visible results of finishing assignment and successfully linking it to shelters: proof of pudding ;-)*

CyberSurfiver learners often specifically requested feedback from their fellow learners. They would typically invite their tribe members (or all others in the game) to *'check out'* their accomplishments. Larissa (Response to Question 2, Test 3) explained why feedback from peers was different from that which the facilitator might provide.

> *Feedback from peers takes into account other factors than teacher evaluation, as they all did it under the same circumstances: learning opportunity for teacher!*

Apart from the qualitative feedback that fellow learners often spontaneously offered to one another, the other main sources of feedback from their peers were located in what happened in the assessment and voting stations. I consider the fact that learners were only able to record *quantitative* assessments as the one weakness in the design of the voting and the assessment stations. The stations did not allow users to provide qualitative feedback. If they had, learners would have been able to explain their reasons for allocating a poor mark to individual assignments. Brenda made a comment about this in her response to Question 3, Test 2:

> *Feedback is always very important in any assessment and peers should not be allowed to assess each other without being given the opportunity to give feedback to the person that has been assessed.*

She suggested that the rubrics used for some of the activities be made available online so that learners could simply indicate (by ticking) their score for a particular piece of work.

The quantitative feedback that learners received for their performance from the peer assessment activities and from the voting at the end of each week did nevertheless provide learners with some indication of their progress. In my opinion, the design of this feature of the game still needs a lot of revision because many learners did not use this privilege responsibly. Dan (Response to Question 2, Test 3) commented:

> *At times I was unsure of how I was progressing, although I do believe that we received more than enough feedback. It was not always easy to interpret the feedback that was in the form of voting and peer evaluation though.*

Learners often however offered constructive qualitative feedback on the work of others. Warren, for example, commented on another tribe's site by saying:

> *Been to your website = GREAT!! However it seems that the URL link to you last game "Scavenger Hunt" (developed by Jasmine) is not active.*

This type of feedback was regularly given, and most learners appreciated, and even actively requested, this type of input from their fellow learners. Brenda (*Yahoo Groups*, Wednesday 24 July 2002, 11:35), for

example, requested her tribe to access the tribal web page that she had collated for them, while Dan (*Yahoo Groups*, Wednesday 24 July 2002, 06:33) also invited comment:

> *I have posted the first review on our site. Take a look and write some comments!*

Most learners also posted their articles (final Individual Assignment) to the *WebCT* Bulletin Board so that it would be available for the rest of the group. Brian (*WebCT* posting, 30 August 2002, 21:37) specifically requested feedback on his article:

> *I really want to know what you think of my article.*

Apart from relying heavily on the qualitative and quantitative feedback from their peers, learners also found the feedback that came from me as the facilitator indispensable. I undertook to assess all their Individual Assignments at a point half way through the course (end of Week 3, beginning of Week 4), and again at the end of the module (End of Week 6, beginning of Week 7). Apart from this official feedback, I made a concerted effort to provide the learners with constant quantitative feedback online, both individually as well as for groups as a whole. But I realised once again that marks were the only 'acceptable' means of assessment and feedback in the eyes of many of the learners in this master's degree course. Brenda (Response to Question 2, Test 2) expressed a need for individualised feedback as soon as possible after each session. She stated that a general comment such as "You were all great" was insufficiently helpful.

Other learners (in a Focus Group discussion) appreciated the personal touch that the web allows:

> *And she always made it sound as if she was only speaking to you. She never gave you the idea that she was actually talking to ten other people also. She made it personal.*

Even though I tried to provide personal feedback as frequently as possible, I often found that a number of different learners had similar questions and enquiries. Rather than repeat myself over and over again to individuals, I took these issues to the Bulletin Board and discussed them there publicly, as this Focus Group comment shows:

> [When a lot of similar questions were asked] *on Yahoo Messenger, she replied to the whole group* [by] *using the bulletin board when she picked up there were a number of questions that came up, like frequently asked questions that came from the students. Then she answered it using the bulletin board. So, it was, I felt, also quite positive.*

Lisandra (Response to Question 3, Test 3) learned from this module that feedback in an online learning environment should always be frequent and that messages requesting feedback should be promptly responded to.

> *Although no time limits were set for responses, I believe feedback was prompt.*

Most learners seemed to agree that enough feedback and support was provided, as these Focus Group comments indicate:

> *Maybe it's just because I argued so much – but I had enough feedback.*

> *I would say that I really got tremendous support from the mentor. We used to talk on the chatterbox thingy… with Linda, late at night, you know, it was amazing.*

Other Focus Group comments included:

> *And she was always available.*

> *Sometimes I wondered, you know, if she ever sleeps.*
>
> .

The availability of the facilitator and immediacy of feedback is always appreciated in an online course where communication is asynchronous (as more often than not it is).

> *If you got her on Yahoo Messenger, which was always, she would reply straight away, and either say to you: yes, she can help you now, or say to you: listen, I'm busy. Send me an e-mail. If you sent her an e-mail, within a day, you got a reply. So that to me, I think, that to me was very positive, because I think it can be extremely frustrating if you can't get hold – if you're in the middle of a course, having to do stuff, and you can't get hold of your facilitator.*

Having free (university-sponsored) access to an unbroken Internet connection during the day, and a R7-deal from Telkom at home after hours, made it easier for me than for most of the others to be online frequently and for long periods on end. Telkom's R7-deal meant that I could dial up during off-peak hours (19:00 – 07:00 daily) and remain online for the entire period. The total cost of the 12-hour call would then only be R7,00.

This was helpful because it allowed me to respond promptly when learners e-mailed me. One of the learners in the focus group discussions also commented about this feature.

> *I want to add to that she was really available, and she accommodated*

> *us. I was doing it in the day from my office, and was not available after hours, and most of them worked after hours, and I mean, she accommodated all of us all the time. I mean, I recall, when I sent her an e-mail during the day, it wasn't a minute, and I got a reply back.*

Most learners seemed to share this view. Brenda (Response to Question 4, Test 2) noted:

> *The facilitator was great. A bit of a bully overloading the students with tasks but great with support and feedback.*

I tried to make it a rule to respond to every message within 24 hours, but even much sooner if possible. By doing this, I wanted to send an implicit message to the learners that I was there if they needed me, that their questions and their comments were important to me, and that I was as involved as they were.

From my perspective as the facilitator, I was nearly always able to provide instant feedback if learners approached me whenever I was connected in the day and in the evenings. I also tried to be very conscientious about replying to asynchronous messages (e-mail or bulletin board) every time I logged on.

In addition I exercised a strict self-imposed discipline with regard to style of writing that I used in communications between the learners and myself. I wanted them to experience as far as possible the warmth and closeness of a traditional classroom, and was therefore particularly careful to include lot of encouragement and support. And because I understood the learners' frustrations with the workload, and the challenges they faced in terms of the technology and their fellow tribal members, I made a conscious effort to combat their feelings of isolation by being helpful and supportive in a friendly and somewhat informal manner.

As I mentioned earlier, I had committed to officially marking their assignments at the half-way point of the module, and again at the end. The reason for my decision not to provide weekly feedback in the form of marks was two-fold. Firstly, I tried to be lenient in terms of the deadlines for the individual assignments because I realised that the learners were adults who all had many other responsibilities that were competing for their time and commitment. Learners often asked for extensions to their deadlines for their Individual Assignments. As a result, I could not assess all the assignments when quite a number of learners had not yet completed them. It simply would not have been fair on those who had handed their assignments in on time. But those learners who did stick to the

deadlines gained by being able to devote their full attention to the following week's assignments without the additional burden of having to carry work over from the previous week. I allowed all learners to update, complete, and improve upon their Individual Assignments up to the final assessment that only took place a week or two after the last debriefing session.

Secondly, because all assignments were posted to web sites (both individual and tribal), it meant that I had to be online at the time of the assessment. Not even I was able to bear the high costs of being online all the time. I too had to work in a manner that was cost-effective and indeed had many other obligations to which I had to attend. Had I completed the assessments on a weekly basis, I would have had to revisit sites repeatedly to make sure that I had not missed any updates. This was simply not feasible for me in terms of productivity or cost-effectiveness.

When I got round to marking the essays and the academic articles that the learners had to write as their final individual assignments, I went to great lengths to provide thorough comments that I hoped would give them useful feedback even at that stage. Because I did not possess a portable computer at that time, I decided to print all the articles out and to take some with me when I knew that I would have spare time on my hands.

As most of the learners were using Microsoft Word for the composition of their articles, and I was still using WordPerfect, I was not, at that time, familiar enough with the word processor to provide learners with electronic feedback. With hindsight, this may have been a much more satisfactory solution because I would then have been able to return their articles to them with my comments electronically inserted. After the module, I never had an opportunity to return to learners copies of their articles on which I had made extensive notes.

This is the one area in which I feel that I failed those learners who spent long hours in working on and perfecting their articles. I also feel very strongly about the value of constructive feedback, and I feel that any first draft of a text needs a lot of revision if one wishes the final product to exhibit a requisite degree of polish. Unfortunately, we did not have enough time during the module for work in this (ideal) way. Future designs of this module should make provision for at least three revisions before the final article is submitted.

Studies show that when workers get feedback that is relevant to specific goals, performance improves (Steers & Porter 1990). We may thus infer that feedback is important because it provides individuals with a means of assessing their performance. And as Bandura (1982) and Kanfer (1990) suggested for the traditional

classroom, it is fair to say that learners in a web-based environment who receive sufficient and timely feedback are much more likely to reach the stated outcomes and to successfully complete their studies.

Peer assessment

Peer assessment, both formative and summative, has many potential learning benefits for both the assessor and the assessed because it encourages learner autonomy and higher order thinking skills (Bostock 2000). The decision to introduce peer assessment as part of the evaluation strategy for the *CyberSurfiver* module was made for a variety of reasons that included my own strong belief in the efficacy of peer evaluation by students and my conviction that it is necessary for each learner consciously to reflect on the learning material and its specified outcomes in both his/her own work and in that of others.

As they carried out peer assessment, learners needed to be able to engage in critical higher order thinking skills if they wanted to be in a position make informed judgements about the value of other learners' products. This ability to evaluate and judge is the highest level of Benjamin Bloom's cognitive taxonomy (Bloom, Mesia & Krathwohl 1964), and is thus of great value. While peer assessment encourages deep rather than surface learning, it also bestows on learners a sense of ownership with regard to the assessment process. It also of course levels of improves motivation (Bostok 2000).

As they judged the work of others, learners were also able to obtain insight into their own performance. Brown, Rust, and Gibbs (1994) state:

> *Peer and self-assessment help students develop the ability to make judgements, a necessary skill for study and professional life.*

I introduced the concept of online peer assessment was into *CyberSurfiver* as part of the design experiment. With funding from the National Research Foundation (NRF), a BTech learner was commissioned to build two stations, one a voting station for the assessment of tribal behaviour (or teamwork), and one an assessment station for assessing the tribal assignments of the other tribes. These stations allowed learners to log by using their unique usernames and passwords. The design of the module then required learners to access these stations on a weekly basis so that they could cast their votes and allocate a mark for the tribal assignments of other tribes.

Because the peer assessment strategy was introduced for the purpose (among other things) of providing learners with the opportunity to see what impact it made in

the elearning environment, I was happy to read Dan's response to Question 3, Test 2:

> *I believe that some degree of peer assessment can always be used. ... Peer assessment is useful because it allows the learner to reflect on his own work as well as that of others. It may also teach learners to accept (constructive) criticism. I would suggest that where peer assessment is used, ... a rubric be used for evaluation. This ensures that the evaluation is fair, but also, the person doing the evaluation will learn from the experience.*

It was clear that he had analysed his own experiences of he peer assessment activities, and had synthesised what he had learned for himself in this response. Geronimo (Response to Question 3, Test 2) also reported that he had learned a lot from doing peer assessment:

> *By assessing the work of my peers, I compared their work with that of my peers, and learned in the process.*

Peer assessment activities not only enriched their own learning experiences; they also motivated learners. Larissa identified this influence in her response to Question 3, Test 2. She stated that a facilitator should make use of peer assessment if

> *the students can learn from objectively scrutinising the others' work. Some may be more skilful than they, and it can be a great motivational tool to see what others can accomplish.*

Roleen was one of the learners who admitted to giving tribes marks without actually having evaluated their sites because of time constraints and the accompanying cost implications. She was quite outspoken in her judgement of the peer assessment system, as may be seen in her response to Question 3, Test 3.

> *I think that the peer assessment worked, but not well, as not all* [learners] *assessed.*

She also tried to explain why all the learners did not take part in the assessment activities:

> *The main problem was that it had to be done online. I do not think that the idea of assessing the other tribe's sites worked well as it was time consuming to go to all the sites.*

Roleen followed this up by articulating a almost universally true statement about most students – and it was one that played a major role in the module:

> *Students tend to do things for which they will be evaluated, and giving marks and spending more time on the net was not part of this.*

In future designs of this module, a system needs to be introduced that will allow learners to be evaluated in terms of the *manner* in which they judged the work of their fellow learners. In other words, since marks will be allocated for peer assessment, one may anticipate that learners will take more care with these evaluations. The system should not only credit learners for *doing* the assessment. They should also be evaluated on the basis of the *quality* of their assessment, and thus on the depth of their understanding of the topic under discussion. It was already obvious in the current version of *CyberSurfiver* that the quality of the feedback provided by learners gave very powerful indicators of the level of understanding of any particular learner.

There was some unavoidable resistance to peer assessment from learners who feared that personal grudges might influence some of the marks. Lisandra (Response to Question 3, Test 4) commented that she personally felt uncomfortable about using the peer assessment system.

> *I believe it is biased – it could be that peers rate each other purely on an "I like you" or "I don't like you" basis which defies the object!*

It soon became clear however that students worked more closely together in those assignments which their peers would assessing than they did in performances that would be assessed solely by myself. Warren (Response to Question 3, Test 2) indicated that the peer assessments in which tribe members indicated the level of participation, and size and value of the learner's contributions, were effective. Dan (Response to Question 1, Test 2) expressed a similarly interesting observation about self-discipline that was needed by the learners in this module:

> *Many learners are more likely to keep up to date if they know that their work is to be evaluated by their peers.*

Roleen also commented on the role of peer pressure in this type of assessment in her response to Question 2, Test 2:

> *If students know going into the project that they will evaluate their peers and be evaluated by them, it causes them to work harder on the project than they might if their grade only were at stake. On the rare occasion when a student does not do a fair share, the other members of the group have an opportunity to reveal that problem.*

Quite a number of learners commented on the fact that they agreed with the peer assessment concept when it is used to assess the

> *effort and input from other group members.*
> [Geronimo Response to Question 3, Test 2]

Samantha (Response to Question 3, Test 2) stated that she experienced the peer assessment as appropriate in the cases where we used it to

> *evaluate each others' contributions towards given projects*.

Roleen (Response to Question 3, Test 3) supported the idea that tribal members had to give each other marks for participation

> *as not all are doing an equal amount of work.*

Tu and Corry (2001) state:

> Participating in an online community creates uncertainty among its participants regarding which roles they should play, what scripts they should follow, how they should behave, and what are the appropriate interactions with fellow members.

In terms of the development of a personal online identity, Dan (Response to Question 3, Test 3) contributed the following:

> *I found this another interesting aspect, perhaps highlighted by the peer evaluation, but even though I rarely met with the people in my community, I was very aware that each person was creating their own online identity though their interactions with others. I also became aware of my own identity within my community.*

Dan went through a rather traumatic experience when his tribal website (built in PHP and obviously high quality in comparison to the sites of the other tribes) was rated lower than some of the other rather elementary and incomplete sites, by his peers. It happened quite by mistake that he saw who assessed him with such low marks. Because of a technical fault with the server that was hosting the voting station, and the fact that it could only be corrected after the weekend, learners were requested to send me their tribal assessments in a private mail to my private address.

Some learners did not heed the warning about sending their assessments to me personally in order to protect their anonymity. Either they did not read the message in its totality, or they simply did not care that their identity would be exposed.

Roleen, as well as a number of other learners, replied to the message, and thus to all the members our *Yahoo Groups*, by listing the tribes and by adding the marks she had allocated to their websites behind the name of each tribe. By doing this, their assessments were no longer anonymous. With hindsight, this turned out to be a helpful development because it opened up a lively discussion on the fairness of peer assessment in an online environment where costs implications and standards need to be taken into consideration. Afterwards, Dan (Response to Question 3, Test 3) replied that he

> *did not enjoy peer evaluation, but was happy with the evaluation.*

Brenda commented in her response to Question 3, Test 2 that peer assessment could be very successful if it were properly planned and correctly executed. She emphasised the fact that assessment criteria should be discussed with participants *before* they start working on an assignment, and that peer assessment could

> *actually enhance the learning process.*

After the discussions about the fairness of the peer assessment strategy, we started collectively to decide on the criteria for the marking of the assignments. Madeline (Response to Question 3, Test 2) approved of this practice and mentioned that she would only be happy with the peer assessment

> *when there is a set of criteria that is designed beforehand and is given to the learners and that set of criteria will strictly be followed and adhered to by the learners*.

The literature suggests that, as far as peer assessment goes, learner involvement should not only be limited to the final judgements made about other learners' work, but should include learner involvement in the prior setting of criteria and the selection of evidence of achievement (Biggs 1999; Brown, Rust & Gibbs 1994). I thus encouraged the learners in *CyberSurfiver* to come up with criteria to use for evaluating tribal members and assignments after they had become aware that everyone was using his or her own judgement and bias as the basis for assessment. This worked rather well, and many messages indicating criteria that they felt were important for assessment if the tribes were to function properly were posted. Catherine (*WebCT* posting, Wednesday, 14 August 2002, 03:05 [am]) expressed a strong need for clear and regular communication in her suggestions for the assessment criteria for teamwork:

1. *Reacting on assignments by contacting and responding to tribe members' communications*

2. *Willingness to indicate when "online" and to assist or respond when one of class members tries to contact you*
3. *Delivering what you undertook to do within the time frame to the correct place*
4. *Indicating that you are trying your best and keeping members in the group informed if you run into difficulties so that they can assist you.*

The notion of open lines of communication was mentioned repeatedly in the criteria that learners offered when they assessed tribal behaviour. It became obvious that the lack of response from some learners was distressing to those who were actively participated. In his *WebCT* posting, Wednesday 14 August 2002, 12:04, Warren also mentioned the need for fellow learners to react and respond to e-mails and to produce the work for which they were responsible in time.

Warren, who remained in an antagonistic relationship with his tribal partner Brenda throughout the module, also felt strongly about the attitude of his fellow learners:

> *The main criteria for collaborate behaviour is attitude. Not everybody has the same knowledge, skills, access to technology, etc. However, everybody has something to offer and the visibility of a member's eagerness, willingness etc. can be evaluated.*

Mabel agreed with Warren in a posting later the same day (17:10) when she stated:

> *I do agree with all you said. As a teacher (and sometime group member) I always looked to see the attitude and the motivation in each one of the group members. The spirit one shows is important.*

I tend to agree with Warren. There were learners who, in spite of suffering intensely because of their deficits in hardware or their inadequate Internet literacy, remained active participants in the module. These learners sometimes stretched themselves beyond what could be expected in the module. But they made it clear that learners who were motivated to succeed and who demonstrated an attitude of eagerness and willingness to participate, were able to overcome many obstacles in order to reach the goals that were set.

It was clear that the criteria that learners identified were based on two deciding principles that devolved on:

- where they felt that certain of their tribe members were failing them
- where they considered themselves to be contributing most strongly

There are a number of potential challenges that have to be faced when peer assessment is introduced as part of the evaluation strategy for a module such as *CyberSurfiver*. At first sight, the validity and reliability of learner assessment may be open to question. One may also question whether the feedback obtained from fellow learners is accurate and valuable. Even though such challenges may be met by means of accepting clear criteria that are based on specified outcomes, by the practice of offering anonymity, and by requiring multiple assessors for each piece of work, peer assessment was not introduced into this module to obtain valid and reliable marks. There are too many research studies that contradict one another in terms of over-marking and under-marking. One may contrast these with studies that indicate that learners graded their peers accurately and consistently (Stefani 1994; Marcoulides & Simkin 1995; Boud & Holmes 1995).

The purpose of the assessment strategy in *CyberSurfiver* was to enrich the quality of the learning in this particular module by introducing peer assessment as a higher order cognitive activity. Taking responsibility for assessment was seen as an integral part of the learning process. Learners were constantly evaluating their own progress against that of others, and many informal comments on the performance of peers were passed. If one asks learners to assess other learners, one may benefit from their personal experience in this traditional and often formal process.

Learners were also told in the introductory document that the peer assessments were going to be moderated by the facilitator. I wanted to ensure that they realised that I retain the right to adjust marks if I should deem it necessary. As it happened, the marks were not reliable for a variety of reasons, and even though the main goal of enhancing their learning was achieved, I only used the marks that the learners gave each other as a guideline in my final assessment of the modules' outcomes.

Young (1993) suggest that

> assessment can no longer be viewed as an add-on to an instructional design or simply as separate stages in a linear process of pre-test, instruction, post test; rather assessment must become an integrated, ongoing, and seamless part of the learning environment.

My purpose in designing the module so that peer assessment was integrated into the learning environment was to give from to my intention that it would promote lifelong learning by helping students to evaluate their own and their peers' achievements realistically, and, most importantly, to encourage them not *always* to rely on evaluation from the teaching authority (Brown 1996).

Interpersonal conflict

Tobin (2001) states that good relationship skills are essential for both facilitators and learners in a distance-learning environment. Without these, courses can easily founder in a welter of conflict, problems, frustration, and failure on the part of both the learners and the facilitator. When learners fail to engage, and are unsuccessful in building up meaningful relationships with both other learners and the facilitator, they are more likely to fail than those learners who succeed in doing so.

Groups usually have a mutually interdependent purpose because the entire group is dependent on the success of the other members. This shared commitment to a common purpose is the factor that distinguishes a *group* from a *gathering* of individuals – and small group discussion from a casual, unstructured exchange. The individual group members rely on each other to accomplish their common objective (Samovar, Henman & King: 1996).

When group members therefore do not communicate and do take part in making shared decisions about who contributes what, insurmountable problems mat arise, as was the case with Brenda and Warren. Because of tensions between them, they did not discuss their various roles and contributions with each other. They then both created separate web sites (a task requested in one of the collaborative tribal assignments). Because they did not work on a single website collaboratively, their websites were the product of their own unaided work (with all the implied and actual limitations of such a procedure), and the workload was effectively doubled.

Warren and Brenda also clashed because they were not able to synchronise their online times for discussions. This made all their collaboration asynchronous, difficult, and time-consuming. After the shuffling of the tribes, Warren once again experienced conflict in his new tribe who wanted to collaborate after hours and over weekends while he preferred not to work on *CyberSurfiver*-related work at those times. He also refused to meet with them face-to-face because, as he correctly explained, this was against the *CyberSurfiver* rules. As most learners ignored this rule simply in order to survive and succeed in almost impossible conditions, they urged him to join them in these contact sessions. But Warren adhered to his convictions and thus became isolated from the group.

All parts of a group interact dynamically and constantly. This means that all parts of a group are intricately interconnected and that each part affects all others. A change in any single part of a group creates a change in all the other parts. Learners often had a way of subtly getting others to 'hear' what they wanted to say in a comment that

was thinly disguised as a joke. As a result, I think a great number of people were discouraged from further participation. Wood, Phillips and Pedersen (1996) state:

> When participation is stifled, member satisfaction declines. There is a direct relationship between participation and satisfaction

This becomes a vicious circle because whenever satisfaction is reduced, the probability that the group will achieve a high level of quality in their outcomes decreases. Stifling participation may thus seriously influence the quality of the outcomes.

Brenda was one of the more active members of the *CyberSurfiver* community. She participated fully in discussions and made optimal use of the mediums available for communication. Warren (*Yahoo Groups*, Wednesday 31 July 2002, 15:51) once responded to her prolific output of e-mail messages with the following:

> *Anybody out there?? Brenda, don't answer – your e-mails are flooding my computer!! (Joke).*

Brenda (*Yahoo Groups*, Wednesday 31 July 2002, 18:32) responded a couple of hours later:

> *I am only trying to make up for the rest of my dead team mates and I thought that that was the fun part of the whole game. It is nice to know that you are not the only one working in the early hours of the day.*

At this stage, the relationship between Warren and Brenda was already strained for a variety of reasons, some of which have been mentioned above. It was therefore clear that Warren, even though he had disguised his comment as a 'joke', was irritated with the number of e-mails he was getting from Brenda. Fortunately Brenda was not deterred by his comments and continued to contribute to the discussions in a spontaneous manner. But Warren and Brenda never managed to resolve their individual differences and the negative effect that these had was that their tribe never cooperated fully or collaborated as they should have done. Clifton (1999) points out that a level of trust is needed in the educational process:

> When people do not trust each other, and when they do not share norms, obligations, and expectations, as is presently the case in many universities, the community is not likely to develop, and the self-interest of people in their status is likely to predominate.

Beatrice (Response to Question 1, Test 3) suggested that the facilitator take control in cases of conflict that occasioned a

breakdown of communication. But such a procedure would conflict with my personal conviction that learners studying for a master's degree should be able to sort out their individual differences and should be able to negotiate workable solutions in areas of conflict.

Clashing individual personalities also affected the dynamics in the various tribes. Conflicts arose because of various factors that included availability, lack of commitment and active participation, divergent personalities, and stubborn individual wills.

The survey (Week 6) asked whether learners had experienced conflict at any stage of their learning process in this module. They were also asked if it had influenced their learning in any way. Most learners indicated that they had experienced conflict or irritations of various kinds. Only one learner wrote:

> *I didn't experience any conflict!*
> [Anonymous survey response]

Others were more cautious and described their experiences as irritations:

> *No real conflict, just being irritated with tribe members* [who were] *not available during off-peak hours and over weak-ends and tribe members not taking part.*
> [Anonymous survey response]

Other learners were more outspoken:

> *Yes. (1). At first all my tribal members were dead (2). I refused to meet in person – it got me voted off. I believe that it did not influence my learning.*
> [Anonymous survey response]

> *There was silent conflict and implied conflict. It did not affect me much – I am a denier of conflict and would not react to it.*
> [Anonymous survey response]

> *Whenever I tried to participate according to my level of understanding the task, I would be ignored* [because I may have seemed to have offered a] *stupid contribution, instead of receiving constructive and positive guidance. Eventually to an extent I was labelled an "online Entertainer". Discouraging and DEMOTIVATING.*
> [Anonymous survey response]

I personally also experienced an incident of conflict with Brian. Brian was extremely focused on achieving good marks for this degree. He was constantly reminding me of the fact that he aimed to attain at least 80% for all his subjects. As I have mentioned quite a number of times already in this thesis,

my focus was more on *what* they learned and how the module was influencing their ability to utilise the Internet to its full capacity as trainers or teachers. I also felt that I was extremely lenient when it came to the deadlines for individual assignments, and made sure that learners knew that they had time until the end of the six-week duration of the module to correct, complete or improve their individual outputs.

Even after I had officially assessed their work, I still gave them the opportunity to improve on points that I had brought to their attention. In some cases, for instance, links from their home pages were broken, and, in other cases, an assignment may not have been found where it was meant to be posted or linked. I repeated my statement of lenience in this regard quite a number of times. Gabrielle, for instance, had the following to say in one of our *Yahoo Messenger* conversations:

> *I just read that missing links can still be fixed and that you will reassess them. I am in the process of correcting mine. Will be ready by tomorrow evening.*

She also noted (Tuesday 24 September 2002):

> *I was extremely relieved when I read in your old e-mails where you specifically mentioned that you were not going to be too strict with the deadlines for the various individual assignments.*

When Brian then, in a *Yahoo Messenger* conversation, erupted because of missing marks for two of his assignments, I also became upset.

I had just uploaded a spreadsheet with the student numbers of the learners, and a mark for each of their Individual Assignments to *Yahoo Groups* on Sunday 18 August 2002. Brian did not follow the link in a *Yahoo Groups* message that the tool sends to all the members of the Group when a new file is uploaded, and he was thus upset about the fact that he could not find the marks.

> *I can't find my marks?*

When I asked him whether he did not see his marks on the file that was uploaded, he responded with the following:

> *Listed where?*

I then told him where to go and look, and provided him with the name of the spreadsheet file. He got back to me almost immediately, having now found the file.

> *I got it. My first assignment is on the tribal site if you click on the B on the left hand side*.

Noting that he was upset, and hoping to calm him down, I responded:

> *I clicked every single link on your page, but let me go and have another look.*

But Brian was steaming ahead:

> *My puzzle is on my site at Hagar. Everyone saw it there and I get 0!*

I was becoming more and more agitated with him:

> *Don't moan so much, Brian. I did mention in my mail that I was prepared to reassess your work if you sent me the correct URLs.*

Brian then got personal, and referred to the fact that I was utilising the module that I was teaching them for my PhD:

> *I work as hard on my degree as you do on yours. Remember to mention these problems with online learning in your doctorate degree.*

I wanted to be sure that I understood exactly what he referred to:

> *Which problems are you referring to, Brian?*

Brian replied as follows:

> *The fact that you give me nil when the assignment are on the pages. What more must I do to convince you that all my assignments have always been in on time?*

In another attempt to get him to calm down, I wrote:

> *Relax, Brian. You are going to get marks for every single assignment that you did. Give me the direct URLs, and I will go and look.*

While this discussion was taking place, I went and took another look at his pages. I clicked on every available link and checked every possible place where these assignments could probably have been, but without success. I wrote:

> *I still don't find the assignments?*

Brian then became quiet for a while. When he returned a couple of minutes later, he told me that he would soon be back to talk to me. After another ten minutes or so, he was back:

> *Sorry, it was my mistake. I ask forgiveness. It lies under my own personal stuff, but the links do not work. I now just want to go and see what is going on. Sorry again.*

I promptly replied:

> *Apologies accepted! :)*

Brian concluded our debate with the following:

> *Do write in your Doctorate that you get 'stupid' people like myself. I was 100 % sure that it was there (long long ago). The file is for some unknown reason not there in geocities – don't understand it at all – sorry again.*

This concluded the discussion, but it sapped some of my energy. I had never before been confronted in that way by a student, neither in person nor online. I felt undermined by the implications of his accusations, and it took me some time to come to terms with this experience. The lesson that I learned from this episode was that an online facilitator must make allowance for misunderstandings and mix-ups in an online learning environment and that in the design of a module such as this one, should make particular allowance for it.

I have also learned to accept that there will always be learners who do not read their instructions carefully, and since one has only one's written messages to fall back on in the elearning environment, they have to be as clear as possible. The one aspect that I did change in my own online teaching efforts after this module was to restrict the length of my written messages to learners, and to stick to one topic per message – with each message containing a unique and clearly identified topic in the subject heading.

In the *Survivor*© reality show, the participants often experience interpersonal conflict. This is completely understandable if one considers the variety of personalities and the harshness of their environment. *CyberSurfiver* also included a number of conflicting personalities who were forced to work together under arduous circumstances. It is clear that it is important to allow time and space for building meaningful relationships in the online environment because conflict, problems, frustrations, and failure on the part of both the learners and the facilitator can seriously hamper the quality of the online learning experience.

Language

The effects of the language medium of instruction on learners' approaches to learning have not been widely researched despite its obvious importance in cultures that use second-language instruction. In South Africa, with its 11 official languages and linguistic groups, an official second language, English, is used for communication between different groups. In the *CyberSurfiver* group, only one learner was a native speaker of English. All the other

learners were Afrikaans, Sesotho, Tswana or Zulu and so English was their second language.

While proficiency in the English language alone does not determine the educational outcomes of a module, a certain level of English is a prerequisite for effective learning (Graham 1987). The literature is not in agreement in its conclusions about the effects of language proficiency with regard to a surface and deep approach to learning (Biggs 1979; Farmer & Sweeney 1997; Watkins, Biggs & Regmi 1991). Some have argued that a low proficiency in English is often associated with a surface approach to learning while high proficiency may promote a deep approach to learning. Other studies have shown the opposite (Flowerdew & Miller 1992; Biggs 1987a).

The first position argues that since learners with a poor command of English are trying to cope with overwhelming demands on their processing capacity, they revert to a surface approach in order to deal with this. Students who are proficient can adopt a deep approach and are able to engage in complex reasoning about the main ideas. Watkins, Biggs and Regmi (1991) agree with this conclusion and assert that they have found that language-confident learners obtain low measurements for surface learning and high measurements for deep learning approaches.

In contrast to this, Biggs (1987a) reports on a study in which it was found that learners for whom English was a second language scored significantly higher on deep learning than did native English speakers, no matter what their first languages were. He argues that second language learners who try to understand a specific concept may need to translate a term from one language to another, deal with it in their home language, and then translate it back into their second language. This would encourage a deep rather than a surface approach.

In *CyberSurfiver*, language barriers often surfaced throughout the module. Brenda (*Yahoo Groups,* Tuesday 23 July 2002, 6:43) identified this problem early on in the module:

> *I think that language is probably one of the barriers of communication on the Internet. The more informal the setting, the less people tend to worry about tenses and spelling. The problem is that as soon as you enter a situation where the content is of a more academic nature and the participants are competing on an intellectual level, people tend to be uncomfortable communicating in a second language.*

Her comments sparked a lively debate on the topic of learning by means of a second

language. Jasmine (*Yahoo Groups,* Tuesday 23 July 2002, 7:54), for example, commented as follows:

> *Thanks for your comments. This is/was a real problem for me – communicating in a second language! But I am trying and learning fast!*

Apart from being personally interested in the topic, I was also pleased that learners reflected on the role of language in the elearning environment and were learning from experience how this challenge could affect learners in a web-based course.

Language proficiency turned out to be a crucial factor in both the synchronous and asynchronous interactions between the learners. It was much easier for them to interact in their own language than it was to do so in a second language. Some non-native language speakers initially took on a much more passive role, with the result that discussions were dominated by English home-language users.

Learners often used hybrid forms of different languages in the group. Samantha (*Yahoo Groups,* Tuesday 23 July 2002, 18:42), who spoke one of the African languages at home, reached out to a fellow tribal member who is Afrikaans speaking by writing the initial sentence of a message in Afrikaans:

> *Goed vir ons groep! E-GO, WE-GO, ALL-GO!!!*

She also requested help from Dan (who is actually a mother-tongue English speaker) for her Afrikaans. This indicated her willingness to respect the cultural differences of tribal members.

> *Help asseblief! … Groetnis.*

Samantha (*Yahoo Groups,* Tuesday 23 July 2002, 07:07), after heading her e-mail as *Ey! Kuyafiwa!* (Loosely translated: Hey, all you dead people!), continued to mix Afrikaans with her own mother-tongue and another African language:

> *Ma-Gang, Ho reng? Nina natuhulanje, eintlik waar is julle?*

When learners wanted to indicate emotions or feelings in their messages, they often drew on their mother-tongue resources to express themselves. Learners would switch between the various languages by using English for formal communication purposes and throwing in a bit of Afrikaans or Tswana when they made interjectory comments. Lisandra (*Yahoo Groups,* Wednesday 24 July 2002, 09:10) stated:

> *I am also in the process of creating my own web page (ek sukkel natuurlik my alie af – but I am*

> *getting there!!* [Translated: I am struggling my butt off.]

After explaining her technical difficulties in detail, she wondered whether everyone understood her problem:

> *– ek hoop nie ek praat Grieks nie*! [Translated: I hope this doesn't sound like Greek.]

It was clear that barriers were created not only by the different languages that the learners spoke, but also by subject-specific terminology with which some of the learners were unfamiliar. Lisandra (*Yahoo Groups,* Wednesday 24 July 2002, 09:10) expressed her lack of understanding of the technical terminologies that were used in one of her messages:

> *Jasmine, that explanation of yours re IP – will you please explain it to me in English, as I have no idea what you guys are talking about!*

On Wednesday 24 July 2002 (07:55), Lisandra explicitly stated her need for some kind of glossary in order to understand the new concepts with which she had to deal:

> *I still need to figure out what all the 'terminologies' mean before I can even start with the assignments – my 'to-do list' is endless at the moment.*

She also commented in a *WebCT* posting, Wednesday 14 August 2002, 16:08 that

> *if learners are expected to converse in a second language they should at least understand the basic concepts and know the vocabulary. This can easily be done through pre-reading assignments or by giving learners a list with the basic concepts translated into their mother tongue.*

After their first request for a list of terms with their explanations had surfaced, Professor Cronjé responded by directing them to a website that had been set up by a learner in a previous group, that dealt with the terms and acronyms such as FTP, LMS and asynchronous communication. Although I am not convinced though that the learners with this specific request ever followed up on Professor Cronjé's lead, I shall certainly include such a list as a part of the resources available to learners in future designs of the module.

Mabel also had difficulty in understanding subject-specific language. In one individual assignment, the learners were each given a topic on which they had to write an academic article. Mabel's topic had to do with the 'affective' behaviour of learners in an online environment. Unsure of the meaning of 'affective', Mabel used *Yahoo Messenger*'s Instant Message tool (Sunday

25 August 2002) to ask me for clarification. The next day she messaged me again and said:

> *Your replay to my questions was most important and it took me on a very interesting voyage in which I have made an example of survey which I would like the whole group to do.*

Mabel, who displayed a deep learning approach despite her obvious lack of language proficiency, came across a site that allowed her to create free surveys. As we discussed this service, I referred to the application as follows:

> *Formsite looks like a very nice freebie!*

'Freebie' was another word which she found difficult to understand, and I needed to explain. This raised my awareness of the fact that one often uses colloquial speech that may be difficult for non-native speakers to interpret, despite of what Gabrielle had said in a message (Response to Question 2, Test 3):

> *As far as communication was concerned, everyone who understood English, could understand most of what was said.*

Geronimo (Response to Question 1, Test 2) highlighted the fact that some learners may have felt isolated as a result of not being native speakers of English when he mentioned that

> *a significant cause for feeling alienated from the course is the feeling of some that the course is dominated by a group that speaks a different language from them.*

Larissa (Response to Question 1, Test 3) touched on the fact that learners often feel inhibited by their lack of language and writing skills. She mentioned that it was the task of the facilitator to

> *encourage them* [the learners] *to contribute their opinions, even if they do not have much confidence in their own writing ability. The old-timers, including the tutors, must set the tone of being informal and the style of language, which is more related to spoken language. They can then draw in the hesitant newcomers to the discussion.*

Roleen (Response to Question 1, Test 2) took another point of view and commented that language issues are

> *a problem in an online course, because any one can participate. I do think that the responsibility lies on*

> *the learner – I shall not take a course if the language is French.*

She also stated that:

> *In our country we do get persons from different cultures with different languages. I think that you* [the facilitator] *should make sure that you use a language without complicated words. If terminology must be used, a list should be provided.*

Interestingly, Beatrice (Response to Question 4, Test 2) stated that the module helped to improve her grammar, especially in English. She also felt quite strongly that

> *English speaking is to be encouraged at all times!*

From time to time, learners forgot that everyone in the class could not understand their comments, and then they would then reply to a message from another in Afrikaans. Apart from the number of black students, for whom Afrikaans is a third or perhaps even fourth language, the group also had to accommodate Mabel who was originally from Israel, and who therefore did not understand Afrikaans at all.

At one stage, Mabel requested learners who were communicating in Afrikaans to translate the messages for her. Brenda (*Yahoo Groups*, Wednesday, 31 July 2002, 18:20) apologised:

> *Sorry Mabel. I sometimes forget! We were having a problem finding out which version of Explorer* [I was using] *and Geronimo and Johannes tried to explain it as simple as possible for the two* dof [an Afrikaans word that means 'faded' but in this context it means 'stupid'] *ones.*

The fact that some of these message (unlike the conversation mentioned above) were of no relevance to the rest of the group, was not known to Mabel because she had no way of knowing what was being said in them. She constantly worried however about the fact that she might be missing important information. Mabel also made a point of thanking those who made an effort to translate their messages on her behalf.

Contributing to the debate on second language learning, Brenda (Response to Question 2, Test 2) expressed her opinion about the use of a learner's first language by stating:

> *You* [should be able to] *contribute short sections in mother tongue if you have a peer that will be able to translate or in case the others will be able to understand.*

In his feedback on the synchronous InterWise session, Dan (WebCT posting, Tuesday 13 August 2002, 09:22) commented that he

> *found some literature to support points made during the session about native language. Literature suggests that interactive sessions are best conducted in the native language of the participants, otherwise the activity tends to be dominated by native language users (which was to some extent true in our case).*

Dan also made an interesting observation about the impact that the novelty of the synchronous medium had on the language usage of the learners.

> *It was also as if, because of the medium, people tried to express their ideas more concisely and even their enunciation of words seemed more measured than in usual conversation.*

Writing the test on the computer had a definite advantage for the second language speakers, as Mabel indicated in a discussion using *Yahoo Messenger* (Wednesday 28 August 2002):

> *I feel it was better then the last time I gave a written test (the first course) to have the Word program with me made it easier to write. I am sure I still have many mistakes yet much less then in hand writing.*

Being able to use the spell and grammar check functions in Word made her more confident about her own writing. Amazingly enough, she apparently also used this strategy when communicating synchronously. In a focus group discussion, one learner explained how he/she approached the spelling and grammar issues of online communication.

> *The online Telkom* [probably meant Yahoo] *Messenger, for me, it was a checking thing with my spelling mistakes. So I was using Word, and while I'm on Word, checking my spelling mistakes and then cut and paste, where the others were writing to the Messenger right away.*

Even in spite of all these extra precautions that Mabel took (and they must have absorbed much of her time), she nonetheless actively participated in both synchronous and asynchronous interactions with myself and the other learners.

I would be hesitant to agree that language proficiency, or the lack thereof, is the only, or even a major indicator of surface and deep learning approaches because Mabel proved that the language barriers could be overcome. But other African learners did not

display Mabel's same deep-learning approach, and this may, or may not, be connected to their second language abilities. These more penetrating questions however do not fall within the scope of this particular study and indicate the possibility of new themes for research. What we can state irrefutably is that second language speakers certainly have to bear an additional cognitive load that is not intrinsically related to the learning outcomes.

Stress factors

Stress is an inevitable part of living and thus of any learning process. In any learning situation there are *optimal* levels of stress that should be maintained. This means that stress levels should be kept within a moderate range that is not too high and not too low. Optimal stress means that learners are not depressed hopeless, but are also not too relaxed or unrealistically optimistic. Learners should not be stuck, anxious, frustrated or angry. Instead they should feel energized and focused as they progress through their learning experiences.

Whereas optimal levels of stress challenge learners to strive and grow, extreme levels of continued stress accomplish the opposite. A classroom (online or otherwise) has to be a moderately stressful environment, one that helps learners to focus on what really matters, one on which they can accomplish the tasks and outcomes, stay calm under pressure, and enjoy the learning journey.

Research tells us that too much stress inhibits learning and higher-order thinking (Lourens 2004; Coates 2003). Too much stress can also inhibit the ability to learn, it can impair memory and the ability to solve problems (Sapolsky & McEwen 1995). Stress and negative emotions inhibit and make learners feel hopeless while a contented, positive environment enhances learning and higher-order thinking.

Initially many of the incidents of confusion and therefore too much stress derived from the fact that the learners did not really understand that two different facilitators were presenting two separate units as part of a single module. Brenda (*Yahoo Groups*, Wednesday 24 July 2002, 4:43) remarked:

> *We think that the problem lies in the fact that the assignment given in class and the one posted on the net differ to the extent that nobody really knows where to start.*

Dan (24 July 2002, 07:29) was also uncertain. He wrote:

> *Thanks Todd – send some stuff for the site, if you have some / are one of the lucky ones who can figure out what they want!*

During this time, learners did not understand that the two units were totally separate entities and that what was discussed in class with the one lecturer had nothing to do with the *CyberSurfiver* unit. It was only after the emergency Tribal Council that this misperception was cleared up. In the meantime, the confusion generated by this uncertainty contributed to the high levels of stress that learners experienced during the first week on CyberIsland.

Catherine (*Yahoo Groups*, Wednesday 24 July 2002, 22:15) attempted to introduce a bit of humour as a palliative for the high levels of stress:

> *Mabel, we won't be offended if you write in Hebrew, as the 'language of angst' seems to be the mother tongue!!!*

Beatrice commented in her response to Question 3, Test 3 that it is a good thing to

> *throw learners into the deep end sometimes.* [This module] *did so successfully!*

Gabrielle summed up her response to Question 3 in Test 3 by writing:

> *Participants were frustrated, praised, and taken apart... some even fell apart all by themselves and had to learn to cope with all of this.*

Later in the module, stress levels once again increased as tribes were required to work together collaboratively online. As personalities clashed and group collaboration was not working as well as it should have done, Brenda (WebCT posting, Wednesday, 14 August 2002, 16:00) commented:

> *I hate situations where I feel that I do not have complete control (call me a control freak if you like).*

Some learners experienced physical symptoms of stress. Lisandra (24 July 2004, 07:55) mentioned:

> *Ek het al sulke moerse knoppe in my nek en skouers van stress!!*
> [Translated: I have huge knots all over my neck and shoulders from stress!!]

In the focus group discussion shown below, some learners compared the *CyberSurfiver* learning experience to white-water rafting (shooting rapids on a river) and once again emphasised the physical effects of stress:

> *It was very hard right through the whole thing, and if I had to compare it to anything, I would say it's white river rafting...*
>
> *That you're on the river, and there's no way that you can get off.*

It's very exiting.

It's painful. I mean I, my muscles, my feet were swollen, my back was sore.

Messages often also displayed feeling of insecurity, and the expression ' feeling dof' was used regularly. ('Dof' is a colloquial expression used in Afrikaans when a person wants to say about someone that they are disorientated, stupid or confused.) Brenda (*Yahoo Groups*, Monday 22 July 2002, 23:16) was one of the first learners to express her feelings of insecurity in this manner:

Am I the only dof one?

Jasmine (*Yahoo Groups*, Wednesday 24 July 2002, 05:52) also used the expression:

Please, isn't it possible to postpone all these assignments to next week – to give all "dof" people like me a chance to find my feet. Really, I'm feeling as if I'm fooling around where "angels" fear to tread!

Larissa (*WebCT* posting, Wednesday 14 August 2002) also stated that she felt very 'dof' when she did not manage to unravel the threads in the *WebCT* Bulletin Board, even after an elaborate explanation from Geronimo in a previous posting. Lisandra (*Yahoo Groups*, Thursday 25 July 2002, 09:10) indicated her self-doubt by signing her message with the following greeting:

Groetnis DIE BLOND (alias Lisandra)

Lisandra is a natural blond, and was making a self-deprecatory reference to a genre of now largely passé 'blonde woman' jokes – the (offensive) point being that blonde women are not very intelligent. She experienced high levels of stress because she was uncertain about how the Individual Assignment was meant to be done.

I *would just like to know how do I get this polling thing onto the site – if I create a poll in Yahoo, how do I link it directly to my web page? Or is there a freeware programme that I am not aware of that I can use to load the poll directly onto the site? (I did a search by the way, but couldn't find anything!!) – Ek hoop nie ek praat Grieks nie! All of this is really very new to me. HELP!!."*

Brenda (*Yahoo Groups*, Wednesday 24 July 2002, 4:43) explained why she felt stressed:

It might be that the you planned that one should feel totally lost but not only do we have to struggle through the jungle of new concepts and terminology but the mass of information is just overwhelming. Basic things such as how to FTP and

> *how to upload files onto a website are things that most of us have never done before.*

Learners also dealt with these levels of stress in a variety of ways. Brenda (*Yahoo Groups*, Wednesday 31 July 2002, 18:09) mentioned:

> *Thanks. Now that I've let off some steam I will try again. I think that I must follow Lisandra's red-wine method. Then at least it is fun, and the later it gets, the less it bothers you when you're not getting it right* [Translated].

As this section has demonstrated, stress exerts both physical and emotional effects on learners. As a negative influence, too much stress can cause feelings of distrust, anger, and depression. As a positive influence, optimal levels of stress can add anticipation and can induce learners to act. In the right quantities, moderately stressful deadlines, competitions, confrontations, and even frustrations all add depth and enrichment to the learning process.

The goal in online teaching should not be to eliminate stress, but to learn how to set it at the right levels, manage it, and channel it in positive ways. We need to identify those optimal level of stress that will individually motivate but not overwhelm learners.

There were quite a number of circumstances that raised the stress levels of the *CyberSurfiver* participants. Some of these included the lack of control over their circumstances, time pressures, lack of participation from fellow learners, conflict between tribal members, technical difficulties, and the frustration of personal achievement goals. It was evident that even the success of others sometimes caused the failure of self-confidence in less literate and capable learners. Some of these pressures were needed to generate momentum in the module. But some of the other stressors were just too overwhelming and too extensive, and future designs of this module will have to take this into account.

Time issues

A group should not be considered separately from its context because learners are always rooted in a variety of other systems such as their families, their work environment, and their financial and infrastructural status (Wood, Phillips, & Pedersen 1996). Groups influence the environments in which they are embedded and are similarly influenced by them. If learners are therefore forced to spend large amounts of time and money (as some were doing for time online [bandwidth]), it certainly affects those who are closest to them.

Atack and Rankin (2002) report that one of the greatest obstacles to learning in the online environment is the lack of time that one can devote to course content alone. Learners often report that they do not have time to access the content at work; this serves to indicate that work environments are often not ideal environments for learner-content interactions. This issue of lack of time also extended into the home environment because subjects sometimes had to compete with others for access to the computer in their homes.

Learners in the *CyberSurfiver* module often complained about the high costs of online time and the amount of time that assignments took to complete. Roleen (Response to Question 4, Test 2), for example, mentioned that she experienced the module as extremely time-consuming:

> *I don't think you always knew how much time we put in.*

CyberSurfiver groups often did not have sufficient time adequately to consider their tasks *because real or perceived time constraints exist for virtually all groups* (Samovar, Henman & King 1996).

Geronimo (Response to Question 1, Test 2) appreciated the fact that I had a sympathetic ear for what he called 'excuses'. He stressed the fact that

> *people on an online course are usually doing it at the same time as holding a permanent job.*

Even though I stated in the ground rules of the module that learners were expected to log onto the course at least once every two days, it was by far more productive to log on daily as the message below indicates. In her response to Question 4, Test 2, Lisandra commented on the time factor stating:

> *One of the negatives* [of this module] *is TIME. This was a very time consuming exercise. It is also hard to catch up with the discussion and respond to it, if you take too long to go into the bulletin board. It is therefore necessary to log on on a daily basis.*

Larissa (Response to Question 4, Test 2) also identified time constraints as one of the weaknesses of Internet-based learning by stating that

> *time for assignments is limited due to full schedules*

This is however nearly always a problem with most learners who study part time and working full time and could probably not be attributed entirely to the nature of the game or to web-based learning in particular.

Catherine, whose postings often indicated that her messages were sent between 2:00 and 4:00 in the early morning hours, identified asynchronous communication as a possible solution to the problem of gruelling work commitments and family responsibilities. In her response to Question 4, Test 2, she commented:

> *Time in busy schedules could also be leveraged to take place late at night rather at set times for classes. (Although this could be seen by some students as a disadvantage!)*

Dan made an interesting observation in his response to Question 4, Test 2:

> *Perhaps because learning on the Internet is higher order learning and one does a lot of exploring and searching, the learning was very time consuming. Also of course cost became a factor.*

Although I do not entirely agree with his view that Internet learning *per se* constitutes higher order learning, Dan is right in his perception that when learners are expected to construct their own knowledge and are therefore expected to do some independent and unaided research. This, although it may be satisfying, can also be very time consuming.

It is true that the *CyberSurfiver* module was overloaded with activities, all of which required a lot of time to complete. But the aim of the module was to expose learners to as many of the features as possible of the Internet. That is why the programme was so heavily loaded. This might have been a good idea – as the focus group comment below indicates:

> *I just want to add something about staying* [active until the end of the module]*, and that is the fact that we didn't have time, I didn't have time to think I could quit. I just didn't have time. You know, I was in this thing, and I never stopped to think … I didn't even consider it, because there was no time to consider that that was – could possibly be – an option.*

In a *Yahoo Messenger* discussion (Tuesday 20 August 2002), Roleen discussed the fullness of her programme:

> *I think its the lack of time that catch us all – everyone is busy and time to have a conference – even online - isn't always manageable.*

She then requested an extension on the deadline for the concept maps.

Warren (Response to Question 3, Test 3) appreciated the fact that

> *there was some flexibility toward assignment dates (late assignments, etc.)*

An anonymous response to the Survey confirmed the fact that learners knew that the deadlines for the individual assignments were flexible.

> *There is always a second chance.*

This was indeed so because I understood the realities of adult learning and the stressful external factors that inevitably affect the learning process. Dan (Response to Question 3, Test 3) also wrote:

> *I think that there was a fair degree of understanding of the audience* [from the perspective of the facilitator]. *Concessions were made where learners were unable to meet deadlines.*

I tried to accommodate learners as far as possible with respect to the deadlines for individual assignments because I understood that family, work, health and other matters may have influenced the time available for the exercises. On the other hand, though, the tribal assignments were of such a nature that one had to keep up with the pace of the tribe or else miss a specific learning experience.

Soon after I posted the assignments for Week 2, I realised that the learners needed more time to explore the applications (*Yahoo Messenger* and *NetMeeting*) to the fullest. I then extended the deadline by another week. This meant that they now had two weeks in which to experiment with the new tools. But I was surprised to note that none of the tribes organised any synchronous time online with the purpose of completing this assignment until very late in the second week. Most of the tribes procrastinated and only really got into the assignment as the new due date drew closer. This made me realise that more time given for an assignment did not necessarily equate to more time spent on a task. All that this postponement really accomplished is that it took some pressure off the learners in one of the two weeks under consideration.

When I commented in a *Yahoo Messenger* conversation with Dan (Tuesday 20 August 2002) that one of the later Tribal Assignments should also have been run over a two weeks, he made an interesting observation:

> *The YM and NM project had its own set of problems related to technical competence and members of groups who were really not on board but yes, 2 weeks did help though had we been given only a week we would have been forced to do it!*

I tend to agree with this statement. Although one would not want to overload learner programmes unnecessarily, extending deadlines does not necessarily improve the quality of the final product. If more time is given, learners relax more and get less done in the process than they might have achieved had the pressure been on them because of a looming deadline. I thus responded:

> *I must say, I noticed that the moment the urgency to complete the assignment was dropped, the pace also slowed down. In some tribes it was harder to get the momentum going again than in others.*

During Week 5, a number of learners requested more time to complete their tribal assignment (a concept map on the topic of elearning). Even though I wanted to be sensitive to their need for more time, I also had to ensure that we had left enough time to complete the next week's assignments. As the tribal assignments were usually peer-assessed and therefore had to be done before a certain date, I undertook to mark the assignment myself in the following week and so give them a few more extra days to work on the map.

> *This is, however, not an official extension. I would still like the majority of you to finalize your work on the map by tomorrow evening as I need you to focus on the assignments for Week 6.*

I was less accommodating with learners who were conspicuous by their absence throughout the module but who then started to emerge two days before the module was scheduled to end. For example, Madeline (WebCT posting, Tuesday 27 August 2002, 23:31) looked for assistance in linking her report (Individual Assignment Week 1):

> *Need to send my report to the webmaster to be linked. How should I go about?*

I reminded the learners on a weekly basis of the progress that they were supposed to have made in terms of Individual Assignments. The following comments came from the Focus group discussions:

> *What I liked, I can't remember how regularly she did it, but I can recall that at times she said: By now, you should have done this and this. And then she'd make a list, and that would remind me of what I haven't done yet.*
>
> *I needed it. It helped me.*

I gathered from focus group discussions that the learners expected me still to be available after the official end of the course.

Apart from the academic articles that most learners were still working on, the understanding was that we should *complete* the module with a final debriefing session once the sole *CyberSurfiver* had been appointed. Unfortunately, I had to leave town to deliver a paper at a conference the week immediately following the end of the module, and only shared this in a number of learners in individual *Yahoo Messenger* conversations. At the focus group, the following comments emerged:

> *At the end of this thing, she wasn't available. Did you pick that up?*
>
> *The moment the course ended, it was like Linda ended. She was not there anymore. Because I wanted to do things afterwards. I just – I can remember that I was looking for Linda. Eventually I picked up the phone and called the Technikon to find out where's Linda, and they said that she was at a conference.* [...] *And that I experienced in a negative sense*
>
> *I expected her to still be available. I was like: joe-hoe, where are you? Then, cyber space-like, she didn't come back to me.*

Without realising that some learners experienced my absence as neglect, I sent an instant message (Sunday 8 September 2002) to the group as soon as I was back:

> *Just a short message to let you know that I am back in town after a wonderful couple of days in Cape Town at the Stellenbosch, 4th WWW conference. I know that some of you would be keen to get some response with regards to your articles. Please be patient though if you can? I will try to get round to them asap!*

I was thus surprised to learn from the focus group discussions that some learners had the expectation that I would still be constantly available to them online, even after the module had ended. In future designs of the module, I will institute specific 'virtual' office hours. This kind of arrangement will protect facilitators from the expectation of being available 24 hours per day.

The *CyberSurfiver* learners who remained active until the end of the module all made considerable sacrifices in terms of their families and their personal lives.

Competition factor

There are a number of research studies that deal with the effects of competition on learning and performance. Much of it

focuses on interpersonal competition in the classroom, i.e. inter-group, intra-group, and individual competition (Clifford 1971; Hamm 1993; Graham 1976). In *CyberSurfiver*, learners had to combine their collaborative activities with those that were based on competition. One of this module's aims was not to prove that competition is better than cooperation – or vice versa. One of the aims was to look at ways of combining the two approaches to find the best balance between the two.

One of the most widely used classroom teaching techniques is competition such as one sees in games, contests, and quizzes. These activities serve to create a classroom environment that can be both motivating, highly charged, threatening, and damaging at the same time. The following section will explore the dynamics of competition on the CyberIsland.

In an anonymous survey reply, one learner responded to a question about the influence of the *Survivor©* metaphor by stating

> *I think it did* [influence his/her learning] *in the sense that it contributed to the competitive element as viewed in the Survivor Game on TV. I see the competition as positive, but the stress it caused in my life is definitely a BIG negative.*

One learner (Anonymous response to Survey) did not like the *Survivor©* metaphor because it had the component of competition built into the design of the module:

> *As an avoider of conflict and a denier of competition, I think it slowed down my learning. It made me tense.*

Whilst the Reward and Immunity Challenges created a competitive atmosphere between individual learners, they were not formally assessed for marks. These challenges were meant to be a playful exercise in which learners could compete on a friendly basis. I was therefore surprised to see the level of competition that had already been established between these learners – as demonstrated by their comments about the Tribal and Individual Assignments (that were formally assessed). It was not so much that the Grand Prize or the fear of being voted off that generated the competition between learners. Rather, the competition to be strongly related to the *achievement approach* (see Biggs 1987a) to learning that so many of the learners had adopted. The achievement motive (as opposed to a surface extrinsic and deep intrinsic motive approach) is based on competition and the ego-enhancement that goes with obtaining high grades or marks. In a *Yahoo Messenger* conversation (Monday 12 August 2002), Dan and I discussed the reasons why no one had yet posted their responses to a particular

individual assignment. He argued his viewpoint as follows:

> *Just making a point about why no one has posted anything to webct yet ... everyone is waiting for someone else ... just to be sure their post is better ... many are too concerned (says he) with marks than with how much they are learning!*

The level of underlying competitiveness also became overt as learners compared their own work with that of their fellow learners. Although Brenda (*Yahoo Groups*, Wednesday 24 July 2002, 10:26) felt excited by her progress because she had managed to complete one of the assignments, she judged her own accomplishment against that which another learner achieved:

> *But I still feel that I am way behind if I look at Dan's site!*

But in some cases, the competition factor inspired and motivated learners. In the anonymous survey, one learner specifically mentioned that the competition element was one of the positive aspects of the game.

> *The biggest positive aspect that came out of the 'immunity' games was the personal competition that it awakened. As the rest of the module heavily relied on group work, this competition factor between individual learners was the source of much excitement.* [Translated in part]

Arbaugh (2000) found that women participated more than men in class discussions and that women were more collaborative than men who were more competitive. On the CyberIsland, Geronimo and Dan engaged in the occasional display of good-natured competition as they both tried to be the first to answer the questions posed in Reward Challenges. One example was when Dan responded after Geronimo beat him in providing an answer first:

> *Drat .... Geronimo got to it before me!*

Although inter-tribal rivalry was rare, it did occasionally occur. On a question from Ted that asking why everyone was so quiet and whether the other tribes still existed, Roleen (*WebCT* message, Tuesday 13 August 2002, 09:35) commented:

> *No, Virtual Eves, Uno is here as well! You may not be able to see us, but we are here! Don't think that because you think something, it is true!*

In the focus groups the learners had opposing views about the competition element:

> *I carried on in spite of the fact that it was a competition.*
>
> *Yes, I hate a competition.*
>
> *I like competitions.*
>
> *No, I'm not a competitor.*

It seems as if the levels of covert competition were rather stronger than I realised during the course of the module. Warren (Personal e-mail, 21 August 2002, 09:21) expressed his relief at being voted off his second tribe by stating:

> *The fact that it isn't competitive any longer (read "back stabbing" & politics) will make my learning experience much smoother (and with less complaints!!!) & sane.*

Competition between learners can manifest both positive and negative consequences. It can be used as a motivating educational tool – or it can be abused. Failure to understand the possible negative impact of competition can maintain the credibility of learning programmes premised on a theory of competition that alienates rather than attracts learners. Future designs of *CyberSurfiver* will have to consider the effect that the overt and covert competition elements had on the learning process.

Research has consistently found that competition induces performance goals and affects learning motivation (Lam, Yim, Law & Cheung 2004). However, as this module shows, not all adult learners enjoy the competitive nature of games. While many of the learners enjoyed the friendly competition that the Reward and Immunity Challenges sparked, most disliked the underlying competition that was rather too evident throughout the module.

Humour

Givіden and Mantyla (1997) suggest that one of the possible reasons why some elearning courses are unsuccessful is because no humour or fun is integrated into the learning process. I strongly believe in the ameliorative power of humour, especially in a tension-laden module such as *CyberSurfiver*.

It is always difficult to report on humorous situations without providing the full context of situations. As it would be impossible to recreate the climate of the course in any given point in time during the module, I would simply report on some incidences of wit and humour as they happened. Although some of these may not seem particularly humorous out of their original context, I have included them here in order to give the reader some sense of how this dynamic operated.

In stressful situations, it often helps to defuse a situation with a witty comment or with a spark of humour. I wanted the learners to know that not everything in this module was a matter of life and death. In one particular incident at the end of Week 1 everyone had just realised the extent of the assignments that had been posted a week earlier, stress levels were high, and there was a need for everyone to see the lighter side of things.

I wanted to be as fair and reasonable as possible as far as assignment deadlines were concerned – but not rigid and inflexible. This was difficult to manage because while I had to be fair to those who had complied with the original timeframe, I also needed to accommodate those with reasonable excuses for not having been able to complete their assignments in time. It seemed unfair though to allow some people latitude in terms of deadlines when others had worked long and dreary hours to complete their work in time. I therefore decided to post the following poll (*Yahoo Groups*, Wednesday 24 July 2002, 10:42) and to allow myself to be guided in my decision making by the outcome:

> *Will you be ecstatic (and forever grateful) if I extend the deadlines for the first week's assignments until noon this coming Saturday?*

The replies that were offered read:

- *Aaah, yes please!*
- *No way, I worked really hard to be ready on time. It won't be fair at all!*
- *Any which way is OK with me...*

Seventeen participants took the poll and 100% of those indicated that they were grateful for the extension.

The literature warns that while humour promotes novelty, divergent thinking, creative problem-solving and risk taking, a facilitator should refrain from any humour that makes reference to anything that might invoke nay degree of feeling about racial, ethnic, gender, political, religious, sexual orientation or alternative lifestyle issues (Hill 1988; Watson & Emerson 1988). But some such humorous remarks arose from the learners' side. Some were slightly more risqué than I could have anticipated. One learner (Response to anonymous survey) 'joked' about her own hard-driving nature:

> *I am self-employed, and the bitch that I a working for does not allow study leave or any such luxuries.*

Geronimo (*Yahoo Messenger*, Monday 12 August 2002) responded to the Reward Challenge in which learners were asked if they knew what a LMS (Learning Management System) was:

> *Now where am I supposed to find out what a LMS is? Sounds dangerously close to PMS!! :-)*

I responded with:

> *LOL! And almost as much of a pain at times ;-)*

In a *Yahoo Messenger* conversation (27 August 2002), Geronimo and I discussed the topic of his academic article, namely, the role of fun and games in adult learning. He commented on his progress and then said:

> *But the web searches are a little difficult. Don't think that you can type in adult and fun & games without stumbling onto some really strange stuff!*

I responded with:

> *LOL, it can add a new dimension to your learning!*

To this he responded:

> *VERY STEEP LEARNING CURVE!!!*

Ted often used humour effectively to convey his feelings. He thanked Samantha (*Yahoo Groups*, Wednesday 24 July 2002, 15:20) for sending him the tribe's motto:

> *Thanks for the motto, it is the only thing that is keeping me sane and going. Lets give real meaning to it. E-Go, We-Go, All-Go, even if it is Slo-go!*

Even in times of extreme stress, some learners managed to manifest a sense of humour. In response to a question about whether the *Survivor©* metaphor had influenced their learning process, one learner replied:

> *I could really identify with the metaphor, as I felt like a castaway on a remote island most of the time. I was, however determined to make the most of the learning opportunity, (some people pay a lot of money to spend time on a remote tropical island in the middle of nowhere!).*

Brenda (*Yahoo Groups*, Wednesday 24 July 2002, 12:00) related her experience on CyberIsland to a local advertisement for a small car (a Tazz) on national television:

> *I now feel like the Tazz ad: 'Life is fun in a tazz!' I now want to say: 'Life is fun on the E-Learn Island!'*

Brenda also made me smile when, in a *Yahoo Messenger* conversation on 7 August 2002, she told me that she was had already logged into the *InterWise* classroom – almost an hour early. She commented:

> *I was scared that I wouldn't get a good seat!* [Translated]

In a a *Yahoo Messenger* conversation with Dan (Tuesday 20 August 2002), after I had discussed the difficulties of collaborating online and constructing meaningful learning over the Web with him, he stated:

> *I must be coming down with a bout of constructivism!*

He noted in the same discussion that he was not too keen for me to grant an extension for one of the Tribal Assignment deadlines when I asked about his feelings in this matter. When I mentioned that another tribe had misunderstood the assignment and had thus to start all over again, he commented:

> *Nice! I'll give them 3/25 without looking now B-)*

His comment has to be seen in the light of a previous incident in which one learner had given his tribe a mark without even having been to their site.

Dan also quoted Catherine in one of our *Yahoo Messenger* conversations (Monday 19 August 2002):

> *The problem is not the online. It is the cats in the group. Getting everyoooone doing their jobs is like herding cats!*

The evening before the online test in Week 6 (Tuesday 27 August 2002), I sent a *Yahoo Messenger* Instant Message to all the learners and wished them good luck for the following day. Dan immediately responded with:

> *Is luck a factor?*

To which I responded:

> *As Gary Player used to say: The more I practice the luckier I get!*

Sometimes a comment was intended to be ironic. One was my *WebCT* posting (Monday 12 August 2002) in which I announced that Brian had won a reward challenge:

> *Thanks Brian for getting us up and running! Your reward is attached for consumption.*

The reward was in the form of a *photograph* of a bottle of beer attached to a message. As I stated previously, although this was really an insignificant reward, the learners seemed to enjoy the silly pictures and competed fiercely to be in the running for this prize.

Earlier on the same Monday, I prompted learners with a message that reminded them of their assignment and what was expected. I then offered a reward to the first

person who posted a message on the topic in an attempt to get the discussion going.

> *There will be a reward for the first posting related to Assignment 8! (And no, Dan, Warren and Brian, it will not be in the form of extra marks, sorry ;-)*

As these three learners had all, at one time or another, indicated their preoccupation with marks, I deemed it appropriate to joke lightly with them in this regard. It was however important for me to include the smiley emoticon because this kind of humour can easily cause a negative reaction.

While there were no doubt times when some of my comments could probably have been classified as ironic or even sarcastic, my intent was always to ease the pressure under which the learners were working. For example, on Monday, 12 August 2002, 21:14, I posted the following message to *WebCT*:

> *Please also note that you are not limited to one or two posting only! Post your comments, then rethink them and change your mind (if you need to), criticize what someone else said, differ or agree with one another, whatever ... Just DO IT!*

It seemed though that some learners appreciated 'the lighter side' of the module – as this focus group comment indicated:

> *First of all, she has a sense of humour, which I find very important. She brought that in.*

Sharing personal information

The immediate families of the learners were well aware of the *CyberSurfiver* module, some because of the positive and interesting world that unfolded on the computer screens of their family member during the six weeks, and others because of the absence of the learner from their family or the financial burden that the module placed on them. Madeline (*WebCT* posting, Monday, 26 August 2002, 23:17), for example, gathered her entire family around the computer so that they could all experience the synchronous *InterWise* session with her.

> *This was a lovely experience even with my family.*

Catherine also mentioned in a face-to-face conversion how excited her daughter had become when she heard the *Yahoo Messenger* 'knock' – the sound clip that plays when one of the friends in your list enters the system. She also relayed her daughter's confusion when she 'talked' to her

computer during a synchronous session with a fellow learner. Because Catherine's daughter is autistic and demanded a lot of attention, Catherine had to change her entire routine. This meant that she did most of her work in the early hours of the morning – from 01:00 onwards.

As the module progressed and the online community started to form, learners often shared their personal circumstances with others in the group. Mabel (*Yahoo Groups*, Wednesday July 2002, 22:01) shared the following with Roleen:

> *Sorry I didn't write to you all this time, my parents are visiting us this days and I was running from here to there.*

In her posting to *WebCT* on Wednesday, 14 August 2002, 17:53, Gabrielle shared with the group that she

> *was in the process of moving house, could therefore not establish* [the InterWise] *connection in time.*

Geronimo, too, shared his personal circumstances with the group in his posting to *WebCT*, Thursday 15 August 2002, 11:07:

> *I will be away for the whole of next week (Grade 6 our to Mpumalanga!!)* [...] *Please keep me in your thoughts, 55 11-year olds are no joke!!!*

Some of the learners had serious challenges to face. Gabrielle told me about one of her personal dilemma in a *Yahoo Messenger* conversation on Tuesday 20 August 2002.

> *I am being tested from more than one side! On Saturday morning, my computer has been stolen from my office.*

In a *Yahoo Messenger* conversation (Wednesday 14 August 2002), Brenda shared her personal circumstances. When I asked how she was, she replied:

> *A little rough, I just came home from hospital – both my husband and my dad are in different hospitals and we had to visit hospitals that are not close to each other*. [...] *I will not be able to attend class tomorrow evening, as I am also going in to theatre tomorrow morning for work on my teeth. I doubt that I will be presentable by tomorrow afternoon. The previous time it looked as if I was attacked for more than 3 weeks!*

The lack of physical and visual contact between the learners in virtual conditions online created a situation in which learners participated 'normally' – even when they were ill and nobody else in the group knew

it. Jasmine (*WebCT* posting, Friday 16 August 2002 20:01) revealed that she had been extremely ill with threatened pneumonia during the previous couple of weeks:

> *For the last 2-3 weeks I was in bed (believe it or not!) and participated on my own telephone account*!

In a *Yahoo Messenger* discussion (Tuesday 20 August 2002), Roleen discussed her full programme:

> *At school, we are currently busy with the record exam, and it is a very high priority (one has to prioritise at some stage).*

Mabel shared the problems caused by her modem being struck by lightning in a *Yahoo Messenger* conversation with me on Sunday 27 August 2002. She then also told me about a crisis with her dog:

> *And if that isn't enough, my dog went into a coma (I hope I am writing it correctly) this afternoon!*

As Mabel was originally from Israel, one evening we informally discussed my own experience of once working there on a Kibbutz. This type of conversation, in essence non-work related, helped to build a sense of trust and some degree of sociability between myself and some of the learners.

In a *Yahoo Messenger* conversation with Catherine (Tuesday 6 August 2002), she shared some personal concerns with me. She had notified me earlier about a power failure:

> *The entire hostel is in chaos*. [...] *I am the mother of a child with autism and I live in a hostel with another 45 of them and they like their routines! The LOL* [Laughing Out Loud] *is coupled with a gnawing of teeth in the background.* [Translated]

She also mentioned that her personal life was in a shambles because of the lack of attention that she was paying to her autistic daughter who always needed special attention:

> *Luckily my child is going to her dad's this weekend, so it will give me a chance to feel less guilty.*

Geronimo (Response to Question2, Test 3) commented on the value of the camaraderie that existed between the members:

> *It is good to see you are not alone in this. Others have the same problems as you have.*

He also commented on the topic of friendship and stated that it is important to

> *get to know fellow classmates, it's easier to work with someone you know.*

Lisandra also noted (Response to Question 3, Test 3):

> *Space was created for establishing a personal identity – especially where the learners had to create their own websites. Members also created a personal identity in the way they responded to discussions on the bulletin board.*

Despite, or perhaps rather because of the pressures these learners had to cope with during the module, some demonstrated an openness and a willingness to engage with their fellow learners. Some of them acted as each other's support network across tribal and physical boundaries.

Synchronous and asynchronous communication

Synchronous interaction means that the learners and/or the facilitator are online at the same time and are communicating in real-time. In *CyberSurfiver*, a number of synchronous applications, some commercial and others free of cost, were introduced to support the interaction between learners with chat rooms, instant messages, conferencing and file sharing.

The benefits of synchronous interaction were that communication between learners was immediate and that feedback could therefore occur in a shorter time period. Synchronicity is ideal for activities such as brainstorming and group decision-making because these activities need rapid interaction and feedback, and tend to be of a lower quality if they extend over longer periods of time (Anon. 2001). Roleen (Response to Question 4, Test 2), for example, experienced the asynchronous nature of the module as problematic for her.

> *Because it* [the communication] *was not always synchronised, you get messages late, resulting in misunderstandings. E-mail garbage is a result of this. If some one has a problem, it has to wait till some else is online and prepared to help.*

The immediacy of response and feedback seemed to have played an important role in learners' preferences for synchronous communication, as the Focus Group comment below indicates:

> *Because in synchronous* [communication] *you could ask a specific question to a specific person, and get a reply now, and carry on with your work.*

Another learner indicated his/her preference for synchronous communication because of

the immediacy that it created in Focus group discussions:

> *Because with Messenger I could type hallo Jasmine, how are you? And she'd say: Fine thanks, but I am struggling with this... So that circle of communication to me is very important. I can't send an e-mail to her and tomorrow get a reply and I can't remember what it's about. So as soon as we started using the Yahoo Messenger... it was better*.

Logistics and time limitations were two of the drawbacks of synchronous learning. The fact that all communicating parties had to be online *at the same time*, regardless of their location and obligations, was disruptive to those adult learners who had diverse family and work responsibilities. Learner population size and their availability in terms of synchronicity, also make it difficult to schedule a suitable time for such sessions. Larissa (Response to Question 4, Test 2), for example, mentioned how difficult it was to attend the synchronous *InterWise* session. She mentioned that because the nature of the rest of the course was asynchronous, it was difficult for her to reschedule prior engagements (in her case a school function) to attend the synchronous session.

Synchronous communication worked well for short sessions of about one hour. But in *CyberSurfiver* the *InterWise* session took place over two hours, with a decrease in attention and participation after the first hour.

In *CyberSurfiver*, the synchronous component brought in by *Yahoo Messenger's* instant messages became a lifeline for most learners. For example, in a *Yahoo Messenger* conversation (Saturday 17 August 2004), Dan and I discussed how his new tribe has settled in. He commented:

> *Good question ... no one is online... I think we're a little out of sync ... between the async and sync comms. This is a difficult project to do collaboratively!*

Asynchronous interaction means that learners have to communicate over elapsed time and not in real time, and usually have to do so in a typewritten format. This type of interaction includes straightforward discussions, group project activities, assessments, surveys, and votes – to name but a few of the elements. While some of these asynchronous activities were completely open-ended and informal in *CyberSurfiver*, for the Tribal Assignments they were constrained by defined starting or ending times.

The main benefit of asynchronous interaction is that it allowed for flexibility gave learners an opportunity to accommodate their real-life realities and obligations. Larissa (Response to Question 4, Test 2) identified

the fact that the learners were not bound by synchronicity as an advantage:

> *Available anytime, anyplace. As all in* [the *Survivor©* module] *are working full time, we could structure our time to suit work and family timetables. Some worked during the day, others at night and over weekends.*

Dan (Response to Question 4, Test 2) identified the asynchronous nature of the module as a strength:

> *I could get on with* [my] *work at any time and from any place. We all worked late into the night or got up early. Many of us worked from home and from work.*

Learners connected to the Internet when it suited them, and a variety of documents and file attachments were shared, unlike in synchronous communication which is mostly text-based.

Larissa (Response to Question 4, Test2) identified the availability of asynchronous communication tools as invaluable because they allowed learners to communicate with each other and with the facilitator, and to therefore build up a learning community.

> *Sometimes you had to wait a bit, but help was always on hand, and Linda eventually sorted things out.*

For groups that are geographically dispersed, or for learners who have different working patterns such as Warren (he worked on the module during office hours) and Brenda (she worked on the module after hours), it was an ideal mode of communication. Asynchronous interaction made it possible for both these learners to access the classroom at times that suited them both as individuals. Brenda, in her response to Question 4, Test 2, enjoyed the fact that the

> *Virtual Island Classroom was open 24 hours a day, seven days a week.*

Gabrielle commented in her response to Question 3, Test 3 that she felt that

> *the social dimension of asynchronous learning networks proved quite successful. Communication between people took place that otherwise would not have been the case.*

Asynchronous environments also provided a fairer method of communication than either face-to-face or synchronous communication because all learners then had equal opportunities to contribute. They were not inhibited by their own lack of language skills or by the overbearing personalities of other learners. Those learners who found it difficult to speak up because of language differences or shyness could interact by means of the bulletin board or e-

mail and take their time to construct a written reply because they could consult dictionaries, and use spell and grammar checkers. The asynchronous mode of communication allows time for everyone to *think* about the learning content.

Another advantage of the asynchronous environment is that the learning does not have to be geared to the average student only (Anon. 2001). Those learners who wanted to research the topic under discussion in more depth were able to do so in their own time. Slower learners could also review their material a number of times.

Technically, access to asynchronous environments can often be made with lower hardware and network specifications than are required for synchronous ones. As limited bandwidth is still a major problem in South Africa, asynchronous environments have an important role to play. The lower hardware and network specifications made access easier because most computers were able to handle the entry-level requirements.

The downside of the asynchronous part of the learning is that it occurred over longer periods of time. In *CyberSurfiver* this often meant that it was difficult to come to group decisions or to share ideas quickly – a necessity in view of the extremely tight deadlines.

Motivation was also a critical factor. As we saw with the extension of the deadlines for the *Yahoo Messenger* and *NetMeeting* assignments, it seems to be a widely evident human trait to procrastinate until it becomes obvious that the work is about to be assessed or judged. With synchronous environments, because the threat of exposure is greater, there is pressure on learners to arrive prepared.

Learners who did not have a self-directed approach to learning failed to contribute in the asynchronous environment because there were no strict deadlines and no facilitator watching over them. These learners needed additional coaching in self-managed learning and collaboration – which was the cause of serious problems in the *CyberSurfiver* module because of the time constraints and the fact that the initial design did not accommodate such deficits in learners.

In synchronous learning teaching and learning took place in real time while the facilitator and learners were physically separated from each other. In asynchronous learning the process took place – but with additional time intervals – during which the learners and myself were physically separated from each other. Both of these types of interaction has its proper use in our online community and were thus designed to complement each other. As Gabrielle concluded (Response to Question 3, Test 3):

> *There was a good balance between synchronous an asynchronous instructional strategies. The effectiveness thereof however still was in the hands (hearts and heads) of the participants who either by choice or by money constraints and lack of skills strongly influenced the level of participation.*

Aitken and Shedletsky (2002) stated that they found

> *chat and instant messaging to be less useful for group interaction than e-mail or message board communication... that message board and e-mail discussion lend themselves to more serious, on-task discussion than does online chat.*

In contrast, McInnerney and Roberts (2004) argue that asynchronous communication may not give the immediacy that is required for successful social interaction. They note that the lapsed time that can occur between a question and the answer may not help to counteract the sense of isolation from which some learners suffer.

Both synchronous and asynchronous types of interaction are required for the successful operation of an online course. Wang and Newlin (2002) note that they

> *believe that the type of interaction fostered by online chat rooms will enhance and clarify the information that is gathered via asynchronous interactions. Both types of information delivery systems are needed.*

They also stated that they

> *think of asynchronous communication as the "backbone and muscle" for course content, online chats are the "heart and hustle" of our Web-based classes.*

Cost implications

Throughout the world the convenience and cost savings that accrue to online learners are regarded as benefiting online learners (Phillips 2004). But because of differing needs and interests, an adult learning module requires a different focus from that found in traditional programmes. Adults most of all need *convenience* because they have family and work responsibilities, and often cannot take time off to attend classes at any time.

The importance of this fact was not emphasised strongly enough in the initial design of the module. When the decision was made to present the entire elearning module online, we realised that some learners might not be able to afford to complete the module from their home

computers. We immediately ensured that all potential learners would have access to computers with Internet connections at the university. The fact that learners could make use of the computer laboratories that were open 24 hours per day on the campus for the purpose of study was then communicated to all learners during the first contact session.

However, as the learners were all adult learners with family and work responsibilities, convenience of access turned out to be more important than costs. Most learners preferred to work from home rather than to travel to the university. But this did not mean that they were happy with the situation. Most learners made some or other comment about the high costs involved in doing an online module in South Africa. Warren, a lecturer at the University of Pretoria, refused to work from home and blamed the high costs involved in having to access the Internet from his home for his decision. In his response to Question 4, Test 2, he stated:

> *During this module each member worked when and where it suited him/her. I worked from work (during the day to save on my telephone bill), while others preferred (are forced due to their working environment) to work from home, after hours.*

Much of the conflict between him and fellow tribe members rose from this arrangement because only he accessed the course from work and in office hours alone. One anonymous learner responded in the survey by stating that doing this module cost him/her about R2000. Lisandra identified the high costs that the module entailed as a weakness in the system in her response to Question 4, Test 2. She stated:

> *I think a number of people lost out on a lot of information due to the high costs. This is especially true for "middle income" South Africans with the low bandwidth problems this country is currently experiencing.*

Gabrielle (Response to Question 4, Test 2) agreed with the fact that the financial implications had a negative effect on the learning process.

> *Another serious disadvantage is the cost aspect of the module. There are many hidden costs involved and* [these] *can be a real* [contributing factor] *to the level of activity and interactivity of some students.*

Madeline, in her response to Question 4, Test 2, also mentioned the fact that this module was expensive:

> *A lot had to be done on the Internet in the module in a very short space*

> *of time and this means a lot of money at the end of one month*.

Geronimo was one of those learners who frequently commented on the high costs involved in successfully engaging in the module. His comments constitute an interesting observation:

> *Because the course is accessed from home, it becomes very expensive. It would be ideal to be able to access the course from work – as part of your job!*

Geronimo was a primary school teacher with lots of extra-mural obligations. He was also married and had quite a number of personal responsibilities to attend to. As his only available access was from home, being online for long periods on end tended to become extremely expensive for him. But he did not make use of the free campus access because of the inconvenience of having to drive to campus.

Other learners such as Warren and Gabrielle did not experience the problem so acutely. They were both lecturers at the University of Pretoria and therefore had reliable 24-hour unlimited access to the Internet from the comfort of their offices. As Geronimo implies above, they were both in a position in which some of their assignments, such as the one for which they had to write a scientific article, coincided with what their jobs as academics required. It was therefore easier for them to cope with both the cost and time implications of the module because they could complete their assignments at work.

Apart from the cost of Internet access, the only other item that had cost implications was the microphone that was needed for two of the assignments. A microphone could cost anything between R30 and R80 at that time, and this was not considered to be an excessive expense by any of the learners. Without the microphone, a learner would have missed experimenting with the sound capabilities of *Yahoo Messenger* and *NetMeeting* and the *InterWise* session that depended rather heavily on the sound capabilities of the linked computers. But the microphone was not a compulsory item, and it would not have influenced the learners' chances successfully to complete the module.

Even though the introductory e-mail telling the learners about the upcoming synchronous *InterWise* session specifically mentioned the scheduled time frame of two hours, Brian was under the impression that it would only last for an hour.

> *1 hour became 2.5 hours – that is a lot of money online lecturing.*

In reality the session lasted only two hours. It started at 20:00 and ended at 22:00. This showed how important it is for learners to

know exactly what to expect from an online learning experience – especially in those cases where synchronous contact that may affect the overall costs.

At one stage Catherine (Response to Question 4, Test 2) stated:

> *Biggest technical problem is the size of the telephone account which has not yet arrived.*

Jasmine agreed on the high costs in her *WebCT* posting, Thursday, 15 August 2002, 08:35, by responding to a complaint by Catherine:

> *The* sound of $$$$$ is haunting me as well!

Roleen (*WebCT* posting, Monday 12 August 2002, 22:07) also mentioned the telephone bill.

> *I enjoyed it very much, but still waiting for the phone bill.*

It seemed that everyone feared the telephone bill. Geronimo (*WebCT* posting, Tuesday 13 August 2002, 20:03) stated:

> *My wife is going to kill me if she sees this month's phone bill!!*

Brian responded a couple of hours later (22:18) with a similar reference to his spouse:

> *Geronimo, I agree with you. My wife is talking about divorcing me (money for my child's clothes used for the discussion). You know* [that you] *said that if you take this course and see what you learn each day, money mustn't be a problem. What if you have R 350 to survive with until 23 August 2002? That's the facts!!!*

The financial implications of being constantly online were a source of great anxiety to Brian and others. I appreciate the fact that he did not simply withdraw from the module (his attitude may tell us something about why some learners do not complete their online courses). Brian was highly motivated to complete the module successfully (remember his constant emphasis on high marks), and was not deterred from actively participating even though he complained bitterly about the costs. Another less-motivated learner, simply withdrew from the course and adduced costs and limited time and access as reasons.

Another response mentioned the indirect financial implications caused by the large number of hours spent in front of the computer doing work related to this module:

> *Unfortunately to me time is money – not in the sense of the few rand paid on a telephone bill, but to the projects that I did not work on as*

> *hard as I was supposed to. I am self-employed ...*

Because of the number of complaints about the high costs, I was amazed to see the responses from some of the learners in the tests. Warren (Response to Question 2, Test 3) surprisingly suggested that elearning is

> *More cost-effective than in person training.*

He also posted his advice to fellow learners and complained to them about the high costs (Response to Question 1, Test 2):

> *Join Telkom's R 7 a call, so that your call can never cost more than R7.*

Telkom, South Africa's sole national telephone service provider, offers a service in terms of which one pays a fixed levy every month. Then, when you make calls after hours (19:00 – 7:00), your telephone bill only increases by only R7 – and the rest of the call is free. This deal was certainly helpful to people such as the learners and myself, all of whom needed to be online for long periods.

Catherine, in her response to Question 2, Test 3, agreed with Warren on the issue of costs and indicated that elearning is

> a *cost effective way of delivering education to people. Cost effective both with regard to time and money.*

Even Dan, who mentioned the high costs involved in the module, noted

> *savings in time and costs*

as one of the advantages of establishing an elearning community.

While I had the greatest empathy with the learners who complained about the costs of the Internet connection, I initially felt reasonably reassured because I knew that those learners with personal financial budgets to consider would be able to access the course and the discussions from the campus computers. But even though most learners voiced their concerns about the high costs, only those learners whose own home computers gave them problems ever made use of the campus option. This fact simply confirms that for adult learners, easy, cheap and convenient access to Internet-connected computers is exceptionally important.

Online culture

The learners generated quite intensive volumes of online discussions by means of messages. For example, during the first week of the module, 142 messages were recorded in *Yahoo Groups* alone, and the

second week, 272 (on average that meant almost nine messages per day). Although these volumes indicated a lively and engaged class, I soon found that reliance on e-mail exposed some underlying problems.

Firstly, some learners did not access the Internet regularly. The result was that they were confronted with large volumes of e-mails when they eventually did. Wegerif (1998) reports that learners may see the activity of reading all these mails as a 'daunting prospect'. Being way behind in reading messages certainly affected the efficiency of the communication system because some learners (because of time constraints) did not read through all the messages and simply focused on those they thought were directed to them personally.

Many learners reported that the sheer volume of e-mail overwhelmed them, and that they fell behind in reading and responding online. In a sound clip on her personal website, Gabrielle commented as follows:

> *At times, I actually felt claustrophobic with all the e-mails coming in and not having enough time to read through and appreciate them all.*

Warren *(Yahoo Groups*, Friday 26 July 2002, 13:26) also mentioned the high number of messages:

> *Maybe I missed something due to our network (which was down) and the fact that I don't have time to read all 75 plus e-mails (from this group alone!!) from the past three days. PLEASE HELP!!*

Some learners also posted their own questions before reading the other learner's e-mails, and thus repeated questions and requests for information that had already been dealt with publicly in a previous posting.

I realise now that this is one of the most important aspects of an online course: making sure that everyone understands the *culture* of the course and the demands that this particular culture will place on them as individuals. This could be accomplished if I had put my expectations in writing or had asked learners sign a joint contract with myself, with other learners and with themselves – a contract that defined their roles and obligations, their expected commitment to the course and to minimum levels of their participation. In future designs of this module, expectations about regular access will be emphasised.

Retention rate

While elearning seems to answer a lot of learner's needs, dropout rates seem to be higher than those in contact-based learning. Some people thrive on the face-to-face social interaction of others, and lose interest when they are placed in environments that lack social events in which others are physically present, or that are deficient in peer pressure, opportunities to do perform well in front of others, or a face-to-face spirit of competition or cooperation. When I designed *CyberSurfiver*, I included these important attributes of a contact class in the CyberIsland learning environment.

The literature seems to indicate that the retention rates of online courses are lower than those generated by their face-to-face counterparts (Distance Learning Impact 1999).

> *While e-learning seems to answer a lot of learner's needs, drop-out rates are higher than those for campus-based learning.*

The Deputy Vice-Chancellor (Academic) of Deacon University, John Rosenberg, has said the main cause of the fact that their drop-out rate is 40% of the university's enrolment can be traced to the distance-education students because this group has a much higher drop-out rate. Professor Rosenberg (Rood 2004) states:

> *If you look at attrition rates for off-campus programs anywhere in the world, you'll find they are significantly worse than on-campus students.*

Vicky Phillips, founder of Geteducated.com, a consulting agency for distance educators in the United States of America, estimates the online student dropout rate at around 35%. The average attrition rate for college freshman at Uinted States universities is around 20% (The Virtual Classroom Vs. The Real One, n.d.). National statistics were unavailable at the time of this study.

Thurston and Reynolds (n.d.) also refer to recent studies comparing classroom and web-based courses that reveal completion rates that are as much as 40% lower for learners who use the Internet as their educational platform.

These higher drop-out rates are often associated with the difficulty that learners have with maintaining sufficient motivation to work their way through courses without feeling either lost or isolated to the point where they simply stop working on the material. Another inhibiting factor background preparation of learners.

One of the main concerns related to the *CyberSurfiver* module was the relatively low retention rate since only 14 of the initial 24 learners completed the module. However, as one of the first year student assistants was initially mistaken for one of the enrolled MEd

learners, this total should actually be reflected as 23 initial learners. This produces a retention rate of 60%.

Many of the learners in *CyberSurfiver* who did not complete the module had a few things in common. They all had little or no prior Internet experience. Another commonality was the fact that they did not participate actively in the learning activities. These weaker learners, most of whom were voted off and into Tribe 5 early on in the game, did not do well at all. A number of reasons may be adduced:

- These learners did not demonstrate a high level of commitment towards the rest of the tribal members. Active learners voted off those who did not participate in the first couple of weeks. As the initial members of Tribe 5 did not access the module on a regular basis, they missed important deadlines, did not grasp the urgent nature despite the asynchronous nature of the communication, and did not participate in building a feeling of group cohesion. They therefore missed their deadlines for the first couple of assignments.

  It is important to emphasise the fact that there were many learners with limited prior Internet experience but who were also self-directed learners who possessed an intrinsic motivation to succeed. Although these learners were not voted off in the early rounds of the game, they were strongly supported by those learners who already possessed a high level of skills.

- Many of the learners who were voted off because of their lack of active participation were not capable Internet users and battled with even the most basic tasks such as accessing the assignments that they had posted in the web-based version of their *Yahoo Group*. Because of this, it would have been difficult for them to produce the outputs (web pages, polls, clickable maps, etc.) required by both the individual and tribal assignments without the support of the more experienced learners in the tribe. Without intrinsic motivation, strong leadership, and a skilled Webmaster in a tribe, no one accepted responsibility for the tasks and they simply were not done.

- An analysis of the eight courses conducted by Thurston and Reynolds (n.d.) indicated the relative capacity to unite, react, and interact, and, to a lesser extent, the ability to deliver timely and appropriate feedback, and module

succinctness as factors that might increase completion rates. Boyle and Boice (1998) also argue that cooperative learning models provide opportunities for interaction among learners themselves and between the facilitator and learners, and that this type of interaction might yield increased retention rates. In the *CyberSurfiver* module, some of the learners did not understand that the effectiveness of the module was heavily reliant on this type of online collaboration and meaningful interaction. This meant that such learners were under the false impression that they could always complete the assignments later *as individuals* in their own time and place and without having to collaborate with the other members of the team. These learners did not understand the value of experiencing the pros and cons of collaborative learning online as part of an authentic learning experience.

- The academic culture and schooling experiences of these learners did not necessarily prepare them for self-directed constructivist learning in which the emphasis is on what the learner brings to the learning experience rather than that which the facilitator prepares and presents. Kearney (1997) states that learners must become more active and self-directed, and argues that this might present a major challenge for those who tend to be passive about their education.

  It is clear that the understanding of the learners about the roles and responsibilities of the learners and the facilitator respectively did not coincide with those of the facilitator. Most of the learners who were voted off in early rounds were accustomed to a behaviouristic instructivist approach to teaching and learning, and were not enthusiastic or eager to adapt to the more constructivist style that the module required. They were not used to being asked to perform as self-directed learners who take responsibility for their own learning.

- Lack of leadership was another contributing factor. No one in Tribe 5 took the initiative to summon the others into action. Without leadership and a strong component of project management, they were bound to fail because the momentum of the module was strongly based on the successful completion of weekly activities and meeting deadlines.

While this module seems to have answered many of the self-directed, mature learner's needs, the dropout rates among the other learners were higher than is acceptable. The current design of the *CyberSurfiver* module did not support these learners sufficiently, mainly because of time constraints, and these need to be revised to make provision for learners without a sense of intrinsic motivation and self-directedness and those who need extra (often quite basic) support to be able to succeed.

Conclusion

To balance the expectations of both a facilitator and those of learners is a challenging act. Barreau (2000) states:

> Factors that influence student performance and satisfaction in [online] programs vary and are often dependent on individual attitudes and prior preparation. Students enroll in courses with certain expectations and preferences. Some may expect traditional, instructor-centered courses consisting of lectures, assignments, and tests... Expectations are likely to influence the quality of the experience.

It is clear to me now that learners in this module expected a more traditional format of teaching, not necessarily because of the introduction of games, but rather because I expected them to become active in their own learning processes and to construct their own knowledge. It is evident though that learners expected and wanted pre-digested information and lecture notes, step-by-step workshops, and summative tests that would determine their final marks. Traditionally most of these learners would only have needed to learn that which the instructor had identified as important. This type of teaching does not usually require the learners actively to participate in class or to work together with others to meet deadlines, and it encourages a surface approach to learning. This means that the learners would have preferred to have focused on what appeared to be important and would then have liked to reproduce that as accurately as possible.

I, in contrast, *expected* a rather substantial measure of independence from these master's degree learners, and stated this explicitly from the start. What I have learned form this module is that it is a difficult adaptation for most learners to move from their traditionally passive approaches to learning and to participate in an active and self-directed manner. It was an adaptation that required much more scaffolding than I had originally placed in the course to help learners to make such a transition. The

learners who were voted off during the first two voting sessions would in particular have benefited if I had been able to spent more time in dealing with them as individuals and if I had been able to help them to form a new tribe and support them with more in-depth technical assistance. Moore (2001) states that online facilitators should give specialised attention to learners with low levels of self-directedness and help them to become more self-directed.

Some of the learners felt the struggle to obtain, and complete, the tribal and individual assignments online became too burdensome and that it was simply too different from what they were expecting and were used to. A handful of the learners therefore decided that the effort was not worth it. But the design experiment also showed me how many learners made huge strides in their ability to learn independently and to overcome technical challenges, whether they were computer hardware configurations or websites that could not initially be FTP-ed.

I realised also that I had designed too much complexity into the module and had not allocated enough time for learners to absorb the most critical elements. By the fourth week, I shortened the assignments and restructured some others so that they concentrated only on what was essential.

Although the active learners were excited about learning how to use the Internet in a teaching and learning environment, the actual experience created feelings of anxiety in most of them. Passing the module, and (for others) passing it with distinction, was centremost in their minds rather than gaining a better understanding of what was possible in online teaching.

Finally, I believe that learning and the evidence that learning has taken place are a combination of an individual's learning style, motivation, previous learning experiences, and learning and feedback strategies. These strategies are composed of many sub-skills and resources such as time management, task organisation, critical reading, completion of assignments, preparing for tests and exams, researching in libraries and on the Internet, collaboration with others, memory, concentration, health, adequate financial resources, and ownership of the learning. *CyberSurfiver* strived to accommodate individual styles while still focusing on the learning outcomes. Those learners who demonstrated that they took responsibility for their own learning through continued active participation and collaboration with their fellow learners, succeeded not only in obtaining good marks for the module, but also in their understanding of what the Internet has to contribute to teaching and learning processes.

Closure

This chapter dealt with how I focused on, described and reached conclusions about the following factors: the development of covert and overt dynamics in the group and the way in which they related to the learning outcomes and expectations, peer support, feedback, peer assessment, interpersonal conflict, the use of language, stress factors, time concerns, competition, humour, participants' personal lives, synchronous and asynchronous communication, cost implications, the online culture, and retention rates.

Chapter 8 will conclude with a summary of the research question and its results, the problem statement and its rationale, the literature review and the design. It will also include a section on the methodological, substantive and scientific reflection. The chapter will close with some recommendations for policy and practice, for further research, and for further developmental work.

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).

Sub-question 3

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 faintthearted. 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:
    - Basic word processing skills such as creating and editing documents, highlighting, copying, and pasting text.
    - Basic computer skills that enable one to use the Web and email (including attachments) with ease.
    - Familiarity with terms like Web browser, online, Internet, World Wide Web, URL, Web site and Web pages.
    - The ability to upload and download materials from the Web.
    - 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:
  - Project Manager (the learner responsible for managing group deadlines and responsibilities)
  - Supporter/Caregiver (the learner responsible for making sure that everyone is 'on board' and actively participating)
  - WebMaster (the learner responsible for the technical inputs that are needed successfully to complete the assignments)
  - 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:
    - learners are fully aware of what is expected of them
    - learners understand the learning value that is derived from this type of assessment activity
    - 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
    - a test run is scheduled before the learners are asked to do the first assessment for which marks will be awarded

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

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