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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

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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

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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.

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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

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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

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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,

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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

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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

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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

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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

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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

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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

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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

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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,

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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

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– 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

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(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

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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.

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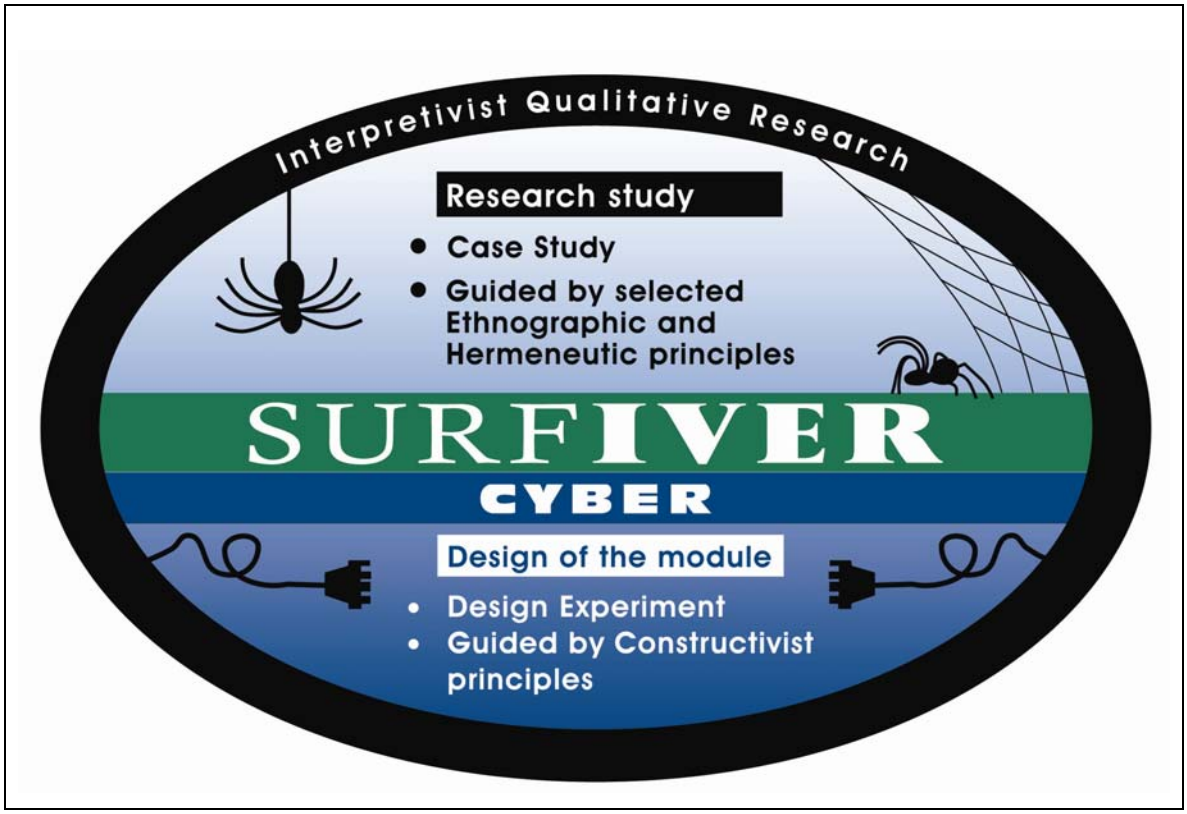
In *CyberSurfiver*, the formative nature of this type of design was particularly scrutinised. It provided me, the researcher, with an alternative model for conducting research because it made allowance for the complex nature of learning in the online environment. The well-known ADDIE instructional design 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

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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

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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.

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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

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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.

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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

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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

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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

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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.

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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.

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- 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.