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# Giving games a day job: developing a digital game-based resource for journalism training

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# GIVING GAMES A DAY JOB

## Developing a digital game-based resource for journalism training

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# CERTIFICATION

I, David J Cameron, declare that the work presented in this thesis is wholly my own work unless otherwise referenced or acknowledged.

This work has not been submitted for qualifications at any other academic institution.

David Cameron

May, 2004

# ABSTRACT

Computer simulations have been commonplace in some industries - such as the military, medicine and science - and educators are now actively exploring their potential application to a range of disciplines. Educators and trainers have looked to the multi-billion dollar computer and video game industry for inspiration, and Marc Prensky (2001) has used the phrase "digital game-based learning" to describe this emerging learning and teaching framework.

The purpose of this research project is to produce an Internet-delivered newsgathering/ newswriting training package that can be used for an expanding, and increasingly visually literate, tertiary journalism education field. This thesis comprises two parts: a) the written component which describes the production of the hypertext-based journalism training scenario and, b) a prototype copy of the training scenario on CD-ROM. The *Flood* scenario depicts the flooding of a fictional city called "Lagoon", and is based on real news stories, media releases and audio-visual material gathered during major floods in the Central West of NSW in August 1998.

In its present form *Flood* is designed as a multi-path learning narrative, which participants must pursue and unravel in their search for news stories. My intention has been to develop a more engaging activity than is currently the case for many traditional, paper-based, approaches to journalism training exercises. *Flood* is also specifically designed for flexible delivery via the Internet or CD-ROM. This approach makes it especially well suited for both on-campus and distance education students. The *Flood* resource is at this stage a limited prototype designed as a teaching aid.

A theoretical framework combining the roles of researcher and producer is discussed in

the thesis. An overview of the use of simulations in journalism education contextualises the practical project, and the place of Web-based scenario simulation within an emerging teaching framework - digital game-based learning - is considered. There is also an examination of historical precedents for the application of technology in Australian journalism classrooms.

The *Flood* prototype has been trialed at Charles Sturt University with on-campus undergraduate students in 2001 and 2002, and with distance education postgraduate students in 2002. Descriptions of these trials, and details of the student feedback, are provided.

This project also includes an experimental narrative element, the use of a software artificial intelligence character known as a "chatterbot" to explore possibilities for providing a more personal and engaging experience. One of the key design intentions of this project has been consideration of ways to allow participants to develop their own lines of questioning, rather than forcing them to simply follow pre-determined paths.

The thesis concludes that digital materials such as the *Flood* package are worthy of future development to complement the face-to-face instruction in reporting tasks, internships and classroom simulations traditionally used in journalism education and training. Computer simulations are a means for providing students with a controlled exposure to the journalistic process. However, simulation and reality are clearly two different experiences, and digital game-based learning in its present form does not provide a complete substitute for journalism as it is practised in the workplace.

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# ABBREVIATIONS

| | |
|---|---|
| AAP | Australian Associated Press |
| AI | Artificial Intelligence |
| AIML | Artificial Intelligence Markup Language |
| AJA | Australian Journalists' Association |
| ALICE | Artificial Linguistic Internet Computer Entity |
| ARPAnet | Advanced Research Projects Agency Network |
| BBC | British Broadcasting Corporation |
| CAE | College of Advanced Education |
| CAL | Computer-aided learning |
| CAR | Computer-assisted reporting |
| CCNMTL | Columbia Center for New Media Teaching and Learning |
| CMC | Computer-mediated communication |
| CRT | Cathode ray tube |
| CSU | Charles Sturt University |
| DDIAE | Darling Downs Institute of Advanced Education |
| DE | Distance Education |
| D&D | Dungeons & Dragons |
| DGBL | Digital game-based learning |
| DVD | Digital Versatile Disc (or commonly Digital Video Disc) |
| ENPS | Electronic News Production System |
| ISDA | Interactive Digital Software Association |
| ISP | Internet Service Provider |
| JEA | Journalism Education Association |
| MIT | Massachusetts Institute of Technology |
| MMOG | Massively Multiplayer Online Game |
| MMORPG | Massively Multiplayer Online Role Playing Game |
| MP | Member of Parliament |
| MUD | Multi-User Domain (or Dungeon) |
| NSW | New South Wales |
| OS | Operating System |
| PBL | Problem-based learning |
| PC | Personal computer |
| QUT | Queensland University of Technology |
| SEDL | Southwest Educational Development Laboratory |
| SES | State Emergency Service |
| TV | Television |
| UK | United Kingdom |
| UQ | University of Queensland |
| US | United States |
| UWS | University of Western Sydney |
| VDU | Video Display Unit |

## CHAPTER ONE

# INTRODUCTION

> "Videogames are not going to go away. You can't hide under the stairs. Resistance is futile. Any industry with such a vast amount of money sloshing around in it is by that token alone worthy of investigation" (Poole 2000, p. 24).

In the three decades or so since video games became more widely available to consumers, the blockbuster titles have reached the commercial status of mass-market movies. In 2000, the U.S. computer and console game market was estimated as worth more than US$6 billion, compared to Hollywood's $7.7 billion dollar box office take the same year (Savitz 2001). Sales in the U.S. digital games market had grown at a rate of 14.9% in 2000, more than double the rate of the U.S. economy as a whole. Retail sales of video games in the U.S. overtook dipping Hollywood box office revenues for the first time in 2001 (Pethokoukis 2002), and reached a record US$6.9 billion in 2002 (IDSA 2002). UK sales have also reached an all time high, with values of £2.74 billion in 2002 outstripping video rentals and movie box office takings combined (M2 Presswire 2003). In Australia, combined software and hardware sales for the computer entertainment industry were estimated at $684 million dollars in 2001/2002, an increase of 43% on the previous financial year (Information & Communication Technology Victoria 2002).

Despite their obvious economic relevance, built upon a significant place in the popular culture, video and computer games often struggle to be taken seriously as an area of academic study. Indeed part of this reluctance to seriously evaluate these texts probably stems from their popularity; the very term "game" places them into a category associated with trivial entertainment. Poole suggests that video games today occupy a similar place to that of cinema and jazz prior to the Second World War - "popular but despised, thought

to be beneath serious evaluation" (Poole 2000, p. 26). Fuelling the apparent low academic regard for computer and video games is the perception that they are the domains of teenage boys. Current statistics from the U.S. argue against this stereotyped view; their average age is 28 and 43% of them are female (IDSA 2002), and more than a third of all software purchases are for game-players aged 18 and over (Pethokoukis 2002).

There is a serious side of the industry emerging in the form of a blossoming educational framework that looks to games and similar interactive entertainment for inspiration. So as not to distract from the purpose of this thesis I have included in Appendix 1 a report on the origins of computer and video games.

Computer simulations have been commonplace in some industries - such as the military, medicine and science - and educators are now actively exploring their potential application to a range of disciplines. American business trainer Marc Prensky (2001) has used the phrase "digital game-based learning" to describe this emerging framework. This concept is discussed further in Chapter Three.

The purpose of my research project is to produce an Internet-delivered newsgathering/ newswriting training package that can be used for an expanding, and increasingly visually literate, tertiary journalism education field. Willcox notes that the developing games market has implications for journalism education and training "because tomorrow's journalists will come from this growing 'games generation'" (Willcox 2002. p. 78). He also suggests that many middle-aged journalists are regular game players, and therefore may be open to game-based training.

This investigation is an attempt to apply some of the key principles and techniques of gaming technology to develop a journalism training resource that is both interactive and immersive. The training package incorporates the *Flood* scenario, which depicts

the flooding of a fictional city called "Lagoon". In its present form *Flood* is designed as a multi-path learning narrative, which participants must pursue and unravel in their search for news stories. My intention has been to develop a more engaging activity than is currently the case for many traditional, paper-based, approaches to journalism training exercises. *Flood* is also specifically designed for flexible delivery via the Internet or CD-ROM. This approach makes it especially well suited for both on-campus and distance education students. The *Flood* resource is at this stage a limited prototype designed as a teaching aid.

This thesis comprises two parts: a) the written component which describes the production of the hypertext-based journalism training scenario and, b) a prototype copy of the training scenario on CD-ROM. The theoretical framework for this approach - combining the roles of researcher and producer - is presented in Chapter Two, and the literature informing the thesis is reviewed in Chapter Three. An overview of the use of simulations in journalism education contextualises the practical project, and this is provided in Chapter Four. The place of Web-based scenario simulation within an emerging teaching framework - digital game-based learning - is discussed in Chapter Five. Consideration is given in Chapter Six to historical precedents for the application of technology in Australian journalism classrooms; the design and production process of the prototype *Flood* package is detailed in Chapter Seven.

The prototype has been trialed at Charles Sturt University with on-campus undergraduate students in 2001 and 2002, and with distance education postgraduate students in 2002. Descriptions of these trials, and details of the student feedback, are contained in Chapter Eight. A concluding discussion and suggestions for further investigation and development are given in Chapter Nine.

Chapter Eight can also be used as an introductory guide to navigating the *Flood* Website,

which is provided on the accompanying CD-ROM as an electronic component of this thesis. The written thesis and the Web-based *Flood* training package ought to be "read" together, and instructions for accessing the contents of the CD-ROM are provided as Appendix 6.

*Flood* lacks some of the elements one might expect to find in a typical computer game, such as an inherent competitive element or obvious rewards. Likewise it does not attempt to simulate the experience of newsgathering to the extent that perhaps a classroom role-playing exercise might. It is also not an attempt to replace other forms of journalism training such as contributions to student publications or industry placements. *Flood* represents an experiment in drawing together some of the information synthesis and problem-solving processes that are shared by computer-mediated games *and* newsgathering tasks.

This project also includes an experimental narrative element, the use of a software artificial intelligence character to explore possibilities for providing a more personal and engaging experience. One of the key design intentions of this project is to consider ways that allow participants to develop their own lines of questioning, rather than forcing them to simply follow pre-determined paths.

### 1.1. The position of the researcher

The idea for this project stems from my previous work as a journalism trainer and radio newsroom supervisor and, more recently, as a university lecturer in journalism and online media production.

I am interested in exploring more dynamic means for using multimedia technologies and computer networks to provide a range of experiences and learning opportunities. While the use of simulations and hypothetical scenarios is a traditional feature of journalism

education and training, I believe the potential educational power of digital media has been largely under-utilised in higher education settings.

Having recently developed distance education packages for a postgraduate journalism course, I was surprised to find a distinct lack of journalism simulation programs suitable for delivery via CD-ROM or the Internet. In the absence of a range of existing resources I decided to create my own.

I contend that contemporary training materials must be geared towards a generation of students that increasingly expects – demands – the imaginative and intellectually challenging use of multimedia (Fromme 2001; Shepherd 2001; Prensky 2001, 2002; Gee 2003) and connectivity (Levin 1995; Cashion & Palmieri 2002). This is not to say that "eye-candy" should triumph over substance. Rather this position affirms the belief that learning materials can adopt higher levels of sophistication *and* design for teaching/learning interaction through the application of new media technologies (Schank 1997; Katzeff 1999).

An obvious parallel to this proposition lies in the increasing sophistication of computer and video games, and their pervasive presence within Australian youth culture. Often overlooked in academic appraisals of popular culture, these new media forms are an increasingly significant cultural industry. In developing *Flood* I looked to the techniques and technology of video gaming for inspiration. That said, it must also be stated that the focus of this approach is training, not computer programming. In creating this project I have worked within a journalistic skill set, which includes Web-design and online media production.

## 1.2. The research problem

This project proposes that journalism training materials need to acknowledge generational change, by making greater use of digital media in order to engage students and expand options for delivery. A prototype of an online-delivered training resource is offered, one that is guided by principles and techniques drawn from the video gaming industry.

As educational aids, computer-based training resources are as old as desktop computers themselves. They significantly advance the innovations foreshadowed by learning through simulation, role-play and games. However the combination of relatively inexpensive multimedia-enhanced computers, and the connectivity afforded by the Internet and World Wide Web, has created a new kind of "pedagogical space" (Freire 1996, p. 127). Online-delivered materials do not necessarily require a student to be present in a particular place and/or at a certain time for learning to occur (Linser & Naidu 1999). In recent years institutions of higher education have increasingly looked to flexible distribution options (Brennan 2000) as a means of catering for increased class sizes, or to expand the potential market for their courses in an increasingly competitive sector (Sutherland & Stewart 1999; Staples 1996). This trend has fuelled a growing demand for training materials that can be supplied via CD-ROM and the Internet.

A corollary to the development of flexible delivery options is an emerging awareness of the potential value of video games as a training tool. Stated simply, there are some things that a computer does particularly well. Online training scenarios are available around the clock, allowing students to work on the material at a time that suits them. Computers, unlike teachers, don't get bored presenting and re-presenting information to students. Multimedia and gaming software can also be designed to maximise the ability to safely simulate real events, while engaging the participants in the professional competencies

that such situations demand.

Despite these manifest opportunities for generating individualised strategies to promote critical learning, there is a lack of Web-based journalism training scenarios available for use in higher education settings – but there are some bright exceptions. One recent example is Rich Cameron's *City Council* (Cameron, R 1999), which uses hypertext to simulate coverage of a local government meeting. Another example is Columbia University's *News simulation: A fire scenario* (Pavlik, Menche & CCNMTL 2001). This initiative uses a Web interface to lead participants through newspaper coverage of a residential fire. Deakin University's (2002) *HOTcopy* uses multimedia on the Web to present a range of learning scenarios and reporting tasks in a simulated newsroom environment. These are examined further in Chapter Five, along with the *Flood* package developed for this project.

### 1.3. Definition of terms

#### *Video games*

This inquiry uses the term "video game" to encompass the range of electronic game systems that have appeared over the last 30 years or so. This thesis is concerned more with the general principles and techniques of digital game forms, rather than specific formats or delivery systems, and focuses on the computer as a delivery-medium. The term video game is also taken to include content designed for computers, and for clarity and convenience "video game" is used interchangeably with the term "computer game" unless reference is made to a specific hardware system.

This thesis generally follows the convention of splitting the term into two separate words. However, the conjoint version "videogame" has been retained where it appears in the quoted works of other authors - notably Steven Poole's *Trigger Happy* (2000).

***Journalism education vs. training***

> "I actually think the best thing about journalism schools is that they're full of students. Students study. Cadets do basically what they're told to do. And what I'm getting at here is the difference between education and training"
> (Ricketson 2001, p. 5).

Ricketson - a working journalist *and* journalism educator - argues that on-the-job training can quickly provide the skills of daily journalism, but university-based journalism education provides the opportunity to reflect on journalism practice. He argues that journalism education and training are separate but intersecting approaches of equal relevance in the media industry.

As this thesis examines the teaching of practical journalism skills in a university setting it is useful to discuss the similarities and differences between journalism education and journalism training, and their meanings for generating pertinent entry skills for graduates in a variety of journalistic placements.

In a formal sense, education and training both imply a structured system of learning. The notion of "education" tends to suggest an emphasis on critical cognitive abilities, with attention given to learning facts, principles and concepts. Traditional institution-based education places great store on analysis, understanding, and problem solving. It is often associated with academic programs and accreditations.

Training suggests that the primary aim is to learn a specific skill, or set of skills. It tends to imply a demonstration of the practical application of craft skills to a trade, and is associated strongly with technical courses and industry accreditation. Training may be something that takes place ad hoc, and often in the workplace rather than in an educational

institution.

By these broad criteria one example of journalism education is an undergraduate degree with major studies in journalism. A degree level course might typically be expected to cover a range of academic topics such as the history of journalism, analysis of the role of journalists, discussion of ethical and professional issues, and so on. A short course or workshop in sub-editing is an example of journalism training. The course might focus on the specific techniques of sub-editing, with the intention of providing participants with those specific skills.

Education and training are often used as interchangeable terms and I suspect this is common in fields, like journalism, where craft or technical skills are perceived to play a large part. In common public perception journalists are often primarily defined by what they do and what they produce, rather than by their critical understanding of what journalism is, or should be. Many journalism academic programs are focused on producing graduates that are employable as journalists (see for example Patching 1997; Stuart 1997; Alysen 1998). These studies tend to suggest that many tertiary programs in journalism combine both concerns, such that journalism training becomes a component of journalism education.

This inquiry explores the development of tools to assist journalism training. The materials presented in the *Flood* scenario are designed for use as part of practical exercises in newsgathering and newswriting – core tasks of journalists. Nevertheless, the scenario also requires the participant to use analytical and cognitive skills to identify and pursue relevant story lines. Some of those news narratives pose potential ethical and legal dilemmas such as needing to filter data, check sources or report on criminal matters. The reality is that it can be hard to draw fine distinctions between the two teaching approaches of education and training.

This thesis uses the term "journalism education" to refer to academic programs that feature major studies in journalism, or more broadly, to journalism as an academic discipline. I have used the term "journalism training" to refer to the teaching of practical skills in journalism, mindful that such training is often an important element of journalism education.

***Interactivity, immersion, engagement and agency***

One of the difficulties of researching Web-based and computer-mediated content is that the lexicon describing the experience is at times vaguely applied (Paul & Fiebich 2002). This thesis examines the teaching and learning possibilities that are afforded by the unique properties of digital media, and it draws on the definitions of interactivity and immersion presented by Murray (1997). She argues that by their nature digital environments are both procedural and participatory; they follow a series of rules and they allow the user some measure of influence or control over the system. Murray argues that these two properties "make up most of what we mean by the vaguely used word *interactive*" (1997, p. 71).

Interactivity is an implicit part of digital media (Feldman 1997, p. 13). A computer-mediated environment is driven by a hardware/software "engine", and is therefore procedural in nature at its most basic level of programming. Calling computer media interactive is at this level stating the obvious, because it "simply means stating the most basic fact about computers" (Manovich 2002, p. 55). Digital applications, such as computer games, also involve a set of rules governing use of the content. These rules do not necessarily have to be based on reality – thus a computer game character may defy the laws of gravity, change shape or colour, and appear and disappear (Turkle 1997, p. 66). A Website, such as the *Flood* package produced for this thesis, is procedural in nature because it adheres to the rules and protocols governing the function and design of Web-

based media.

The *Flood* package is also participatory, as the user can influence the information displayed on the screen by selecting hypermedia links, or by entering text queries to the artificial intelligence software. The user can observe the results of their input, and make new choices based on that information. This is what Ryan (1997, p. 678) describes as low level interactivity, as the user is exerting minimal influence over the system, but it is a type of influence that is only possible with digital media. Paul and Fiebich (2002, p. 8) note "digital storytelling has created a paradigm shift from traditional storytelling controlled by the content developer, to storymaking controlled by the user".

While levels of user influence can vary greatly among digital applications, this thesis uses the terms interactive and interactivity to generally describe the implicit procedural and participatory nature of digital media, even at the relatively low level of hypertext links.

Murray also argues that digital environments like the Web are both spatial and encyclopaedic, "making up much of what we mean when we say that cyberspace is *immersive*" (1997, p. 71). The spatial characteristic relates to the user's sense of digital information being a navigable space. This is evident in the terms "surfing", "browsing" and "searching" often used to describe use of the Internet, and in the term "cyberspace" itself which implies a navigable realm of data. The encyclopaedic nature of digital media stems from the amount and range of information that can potentially be stored and called upon to generate content. Text, images, movies, sounds and animations can be stored and then rapidly retrieved to generate new narrative environments. This allows computers to simulate complex environments - real and imagined - to an increasingly detailed degree. Murray (1997. p. 126) suggests that the more immersive the digital environment, the more active we want to be within it.

The *Flood* training package employs the navigational conventions of the World Wide Web by using hypermedia links to create narrative paths through the scenario. The package is based on a fictional geographical space that is represented and navigated digitally on-screen via the maps, images, text, video and hypermedia simulations of conversations that are stored and accessed using the Web. In this sense it is by definition an immersive digital experience.

The terms engagement and agency are also used in this thesis to describe the participatory nature of digital media like the *Flood* project. It is an engaging learning experience, as it requires the student to actively provide input to the system rather than passively receiving information. Murray (1997, p. 126) argues that the "satisfying power to take meaningful action and see the results of our decisions and choices" while using digital media like the *Flood* package gives us a sense of agency.

### 1.4. Journalism's academic status

The discussion earlier in this chapter on use of the terms education and training touches upon broader on-going debates about journalism and journalism education. As Adam notes :

> "the question of how to educate journalists in a university has been with us at least since Joseph Pulitzer proclaimed optimistically in 1904 that '[b]efore the century closes schools of journalism will generally be accepted as a feature of specialized higher education like schools of law and medicine" (Adam 2001, p. 315).

Acceptance of journalism as an academic discipline is not as general as Pulitzer predicted, nor has it contributed to development of a profession with the prestige of law or medicine. Rather, the area swirls with debate about the nature and definition of journalism, and questions regarding journalism's academic status. Often this debate "has been based largely upon opinions, warnings, demands, and counter-demands" rather than systematic

study of journalism's place in the academy (Fedler, Carey and Counts 1998, p. 32). In Australia, this was characterised by an academic fracas in the late 1990's concerning the value of a multi-disciplinary cultural studies input to journalism education. While it is not within the scope of this thesis to devote space to a detailed examination of these debates, it is relevant to note their existence in the teaching environment in which the *Flood* project operates.

One of the ongoing arguments concerns journalism's status as a profession. As many journalism educators are former or practicing journalists (Patching 1997a), there has been a tendency to focus the curriculum on newsroom skills such as writing, editing, reporting, dealing with contacts, and covering a specialised beat. Educators often justify this by claiming that this is geared towards matching graduate skills with employer demands. They see journalism as a professional enterprise, and that as such it should be a 'closed shop' when it comes to determining the needs of journalism students; often "the assumption here seems to be that journalism can be theorised only by journalists" (Meadows 1999, p. 43).

Critics of this view argue that journalism has emerged as a field with significant power and authority; such that a journalist's relationship to their audience mirrors the structures of dependency typical of "the relations of doctors, lawyers and social workers to their clients" (Carey 1980, p. 6). They contend that given the power and influence of contemporary media, journalism educators "have a duty to encourage students to develop critical analysis and problem-solving skills appropriate for the twenty-first century - an environment that should draw from the widest possible range of theories and methods, even cultural studies" (Meadows 1999, p. 50).

Thus this discussion is not only about what journalism is, but about who has the greatest right to talk about what it is. Opponents of cultural studies tend to argue that it is in many

respects ‘anti-journalist’, and its inclusion in journalism education is at the expense of important practical subjects. Other protaganists in this debate argue that there are some common links between journalism and cultural studies research - in particular the need to observe and comment on elements of society from the outside (Meadows 1999, p. 49; Hartley 1999, p. 25). Cultural studies, they argue, could “encourage students to think about (rather than simply apply) the conventions, professional notions and other practices which are associated with journalism” (Bacon 1999, p. 79).

Adam argues another view - that journalism education and cultural studies are equally lacking in the semiotics of art and inspiration, so that “the language and concepts of traditional journalism instruction are either too lean or too bureaucratic to inspire passion or to encourage the creative spirit” (Adam 1993, p. 7). Adam calls for an undergraduate journalism curriculum that will encompass the tools and infrastructure of journalism to produce good reporters, but which will also embrace and co-opt broader disciplines and democratic ideals to produce good writers, critics and citizens (Adam 2001). In this sense he calls for journalism to be seen as an art, rather than a profession.

As stated previously in this chapter, this thesis explores the development of tools to assist journalism training. The materials presented in the *Flood* scenario are clearly designed for use as part of practical exercises – the pragmatic approach to journalism education. However, the scenario also allows for the exploration and development of analytical and cognitive skills. Also, the broader conceptual framework of digital game-based learning outlined and discussed in this thesis has a potential capacity to address a range of learning and teaching aims beyond basic craft skills.

### 1.5. Summary of Chapter One

This chapter has introduced the premise that video games are a significant element

of popular culture that have traditionally been sidelined from serious academic study because of their association with entertainment. However, there is an emerging teaching framework - digital game-based learning - that seeks to accommodate and utilise the potential of video games as a training tool for a generation of learners familiar with digital media.

This thesis stems from my work as a journalism trainer and university lecturer in the fields of journalism and online media production. There is on-going debate about the nature of journalism, and how best to teach it in a university setting. The purpose of this project is to produce an Internet-delivered newsgathering/newswriting package for the tertiary education market, applying some of the techniques and principles of gaming technology.

The next chapter presents a conceptual framework for this thesis that emphasises the value of combining the roles of researcher and producer.

## CHAPTER TWO

# CONCEPTUAL FRAMEWORK

This chapter describes a conceptual framework for the *Flood* project. Discussions cover three areas: 1) accepted research paradigms - the nature of this project most closely aligns it to the critical theory paradigm; 2) consideration of case study methodology as a suitable means of translating that paradigm into an acceptable research language for examining the *Flood* project; and 3) a description of the "production narrative" method chosen for this thesis.

### 2.1. Paradigm

The notion of paradigms in social research stems from Kuhn's (1970) assertion that a set of beliefs, values or techniques is shared by a scientific community, and guides the types of problems explored and solutions that are accepted. Once a research perspective achieves a paradigmatic level, it is bound to acquire enduring qualities as a "set of beliefs which both enables and constrains research: a framework or scaffold which can underpin or support further work but which, of necessity, also excludes a range of possibilities" (Hawthorne 1992, p. 126). There is no complete agreement about the application of the paradigm concept. Some researchers believe it can be narrowed to apply to any group of like-minded scientists, while others apply it only to the major theoretical movements (Sarantakos 1998, p. 32). This thesis takes the broader approach, using the notion of a paradigm to place the research into a generally accepted community of thought within social science research, and to help drill down to an appropriate methodology.

There are three major perspectives that dominate contemporary social science research – positivism, interpretive social science and critical theory – although these categories

are not exclusively accepted by all researchers. Denzin (1998, p. 317) suggests four paradigms (positivist, postpositivist, constructivist, critical) and three major perspectives (feminist, ethnic models, cultural studies). Other researchers argue that a fourth paradigm, postmodern, should be considered (Lather, 1991). However, these alternatives are yet to be more fully established and accepted (Sarantakos 1998, p. 32). Some of the distinguishing features of the three widely accepted paradigms are presented simply in Table 1, taken from Carroll's (1996) work in drama research.

**Table 1: Research paradigms (Carroll 1996, p. 75).**

| Paradigm | Positivism | Interpretivism | Critical Theory |
|---|---|---|---|
| Nature of reality | Objective | Subjective | Social |
| Purpose of research | Explain and predict | Interpret and understand | Disclose and empower |
| Research perspectives | Survey | Naturalistic | Transformative |
| Methodology | Experimental | Ethnographic | Case study |
| Focus | Comprehension | Interpretation | Exploration |
| Methods | Quantitative Statistical | Qualitative Descriptive | Dialectical Grounded |

While social research literature offers more complex descriptions of paradigms, a simplified approach has been taken for this investigation. Using the matrix illustrated in Table 1 as a guide, it is argued that this project is built primarily upon a critical theory paradigm. This research has a transformative perspective, as it is engaged in the process of changing teaching practice through exploration of the potential applications of new technologies. By necessity this requires the involvement and empowerment of participants in the research, with the intended audience (students) playing an important role in the refinement of the production upon which this research is based. This research then utilises a case study methodology, which is discussed later in this chapter.

Sarantakos (1998, p. 33) notes that while the distinction between positivism and interpretivism is clear, the differences between interpretivism and critical theory are significant but rather weaker. This has particular implications for the choice of research

methods for this investigation, as these non-positivist paradigms are not necessarily incompatible. Thus while this research takes a qualitative and descriptive approach to the issue of enhancing journalism education and training, complemented by a production narrative, it is not inconsistent with the critical theory paradigm described by Carroll (1996, p. 75) and outlined in Table 1.

### 2.2. Methodology

A methodology is a mechanism for translating a paradigm into a research language, creating guidelines for how research is done (Carroll, 1996, p. 74). Yin posits five different research strategies for social science research – experiment, survey, archive analysis, historic analysis and case study – noting that while there may be areas of overlap, the "goal is to avoid gross misfits" (Yin 1994, p. 4). Table 2 compares these five research strategies against three conditions for their use.

**Table 2: Relevant situations for different research strategies (Yin 1994, p. 6).**

| Strategy | Form of research question | Requires control over behavioural events? | Focuses on contemporary events? |
|---|---|---|---|
| Experiment | How, why | Yes | Yes |
| Survey | Who, what, where, how many, how much | No | Yes |
| Archival analysis | Who, what, where, how many, how much | No | Yes/no |
| History | How, why | No | No |
| Case study | How, why | No | Yes |

Using Table 2 as a reference point, it can be seen that a practical way of determining the fit of each of these strategies is to pose three basic questions to the researcher:

1. What types of questions are you asking?
2. Can you control the setting and events?

3. Is your focus on historical or contemporary events?

This project is primarily concerned with "how and why" questions relating to the development of training resources. The behavioural settings and actions of the research are not within my control, as there are many variables. Although there is an historical context for the work, the focus of this project is the development of new materials for a contemporary setting. For those reasons I have chosen to use a case study methodology.

There are pros and cons with using the case study methodology. A unique strength is the scope of material that can be dealt with as evidence, such as "documents, artefacts, interviews and observations" (Yin 1994, p. 8). This approach allows the researcher freedom to interpret the case as it unfolds, giving room to redirect and refine the design if early questions are not working or if new issues arise (Stake 1995, p. 9). This is especially apt for this project, in which prototype Web-based resources were designed, refined and modified based on user trials.

Yin (1994, p. 9) notes that the flexibility of the case study methodology gives rise to concerns about the potential "lack of rigor", such that sloppy or biased investigation may influence the direction of the findings and conclusions. Stake (1995, p. 9) argues that interpretation is a major part of *all* research, suggesting that some measure of subjectivity is allowable in the process of the researcher drawing conclusions based on observations and other data. This interpretation occurs in the context of past and current research and debate. A good case study researcher will invoke "the privilege and responsibility of interpretation" (Stake 1995, p. 12), while presenting other possible views or attributing them to sources. That is the approach I have taken with this investigation.

Another concern about case studies is that they "provide little basis for scientific generalisation" (Yin 1994, p. 10), making it hard to assess the value of the research to a

wider field or to other projects. Yin suggests that case studies are not samples, and their results may therefore be generalised to broader theoretical propositions, if not to specific populations or universes. Similarly Stake (1995, p. 7) argues that a new understanding is reached not from a single experiment or case study, but from the refinement of generalised understandings from repeated observations. It is my intention to draw some general conclusions from this project, and suggest areas of further investigation that may contribute to new understanding.

The final criticism about case studies noted by Yin (1994, p. 10) is "that they take too long, and they result in massive, unreadable documents". This project does not take an exclusive ethnographic or participant-observation approach to data collection, both of which can require an investment of long periods of time in the "field" (Yin 1994, p. 10). Rather, it is a case study based on my production of a prototype Web-based training resource within a university setting. I have aimed for clarity, precision and readability.

The case study methodology for this investigation is informed by the theory of constructivism. Stemming from the work of Bruner (1966), constructivism takes as a major theme the premise that learners build new understandings using existing knowledge. It also posits that learning is an active rather than passive process (SEDL 1996). The application of this conceptual framework to this project is discussed further in Chapter Three.

**2.3. Method**

Discussing the role of researcher-as-storyteller, Denzin (1998, p. 323) argues that a "process can be neither interpreted nor understood until it has been well described." Working within a paradigm, the researcher will make many decisions during the writing process that will necessarily involve subjective interpretation. Lather (1991, p. 91)

suggests that the practice of objective description has been replaced by "inscription", in which the writer must necessarily create their own narrative version of the realities they describe. Using this notion of researcher/storyteller, I have used a narrative method to produce a "thick description" of the production process. Unlike a thin description that reports facts independent of intentions or circumstances, the thick description "gives the context of an experience, states the intentions and meanings that organized the experience, and reveals the experience as a process" (Denzin & Lincoln 1998, p. 325).

In this case study I have produced what I term a "production narrative". This is a description of the process of designing, implementing and testing a Web-based journalism training resource. It can be found as Chapter Seven and is complemented by the accompanying CD-ROM containing a copy of the *Flood* Website. This approach is consistent with what Tulloch (1990, p. 28) refers to as the "ethnography of production", in which production practices are the focus of research and the tone of surveillance is minimised in the researcher's voice. Tulloch and Moran's (1986) examination of the production of Australian television show *A Country Practice* is an example of this approach. As I am the producer of the work under examination I have attempted to not simply report the chain of events as a detached observer, but to give a sense of the decisions involved in the production process and the intention behind the project from the perspective of the producer.

### 2.4. Summary of Chapter Two

This chapter has outlined the conceptual framework for this project. It is consistent with a critical theory paradigm outlined by Carroll (1996, p. 75), as it is engaged in transforming teaching practice through the involvement and empowerment of the intended audience.

A case study methodology has been used, allowing for a range of material to be used

as evidence, and for the research design to be modified as the prototype project was developed. The case study methodology for this investigation is informed by constructivist notions of learning, which are reviewed further in Chapter Three. Concerns about the case study approach have been discussed and overcome, primarily with reference to the work of Yin (1994) and Stake (1995). These concerns included the potential lack of rigor in an investigation, the ability to generalise findings and apply them to a wider field, and the possibility of producing massive and unreadable documents.

The complementary method used for this research is that of a "production narrative", which follows Denzin's notion of the researcher-as-storyteller (1998, p. 323). This thesis contains a description of the Flood project's development and use in the classroom consistent with what Tulloch refers to as the "ethnography of production" (1990, p. 28). The project upon which this description is based is included in the accompanying CD-ROM.

## CHAPTER THREE

# LITERATURE REVIEW

This chapter begins with a review of current thinking regarding the constructivist approach to teaching and learning, and its application to the design and use of computer-based training tools. Central to this approach is the need to motivate the learner to engage with the subject matter, and this chapter considers the potential of computer games to motivate students. Then, the interactive and immersive qualities of digital environments are considered in the context of developing credible training simulations, leading to a review of the application of artificial intelligence software. An introduction to Prensky's (2001) digital game-based learning (DGBL) framework is then followed by consideration of opposition to that approach, and a summary of some of the key arguments that support DGBL. This chapter concludes with a review of social research trends related to video games.

### 3.1. Constructivism and interactive media

This project is informed by the active learning principles drawn from the educational theory of constructivism. This is a general theoretical approach to learning that comes from a study of cognition. The basic principles of the framework described by Bruner (1966) are that (a) learning is an active process of constructing rather than acquiring knowledge; and (b) teaching should acknowledge and support that construction and not merely supply information. Constructivism assumes an active process in which learners build knowledge by applying their current understanding to new experiences and problems. Current knowledge is tested, and understandings can change to accommodate new experiences (SEDL 1996). Constructivism has come to serve as an umbrella for a diversity of views on teaching and learning, and constructivist concepts have been

embraced widely within educational research, theory and policy – to the point where any other approach is attacked for being "passive, rote, and sterile" (Duffy & Cunningham 2001). Driscoll (1994, p. 376) suggests the growing popularity of constructivism mirrors the increasing availability of interactive technologies, as computers offer "effective means for implementing constructivist strategies that would be difficult to accomplish in other media".

Some critics argue that constructivism inevitably leads to subjectivity, in which the validity of any individual's constructed view of the world cannot be accurately tested or compared to other views (Duffy & Cunningham 2001). Constructivists suggest that rather than assuming that a shared view of the world is necessary, we seek a measure of compatibility – a lack of contradiction between views (Rorty 1991). This leads to the principle that teaching cannot be treated simply as "the transmission of knowledge from enlightened to unenlightened" (SEDL 1996). The problem with this approach is that merely providing new information is no guarantee that learning will occur. Teachers must seek to challenge the subjective understandings of individual students, so that they might share new perspectives and create new knowledge from the experience. As described in Bloom's (1956) taxonomy of educational objectives, knowledge and understanding represent the lower orders or learning, while synthesis and evaluation of ideas represent the higher orders. Similarly Gagné's (1985) conditions of learning move from simple levels of learning to more complex and abstract stages. The *Flood* project, which requires students to solve problems and evaluate information, assumes some basic knowledge about newswriting and newsgathering and aims more at the higher conditions on these two frequently used hierarchies of learning.

This project with its focus on interactive media fits the constructivist approach to education, as it offers the potential for active and engaging learning that can be individualised and contextualised. Quinn (1994, p. 48) argues that the constructivist nature of computer

games is evident in that they "require the user to explore and discover the contingencies that guide success". Rieber (1996) has noted that some instructional media designers have struggled both to exploit the interactive potential of computers while remaining consistent with theories about how people learn, and to deal with the practicalities of delivering educational materials to schools and workplaces. While accessibility to computer networks and multimedia-capable computers has improved the delivery of materials, the challenge to designers remains. In particular, computers and multimedia in education "have naturally been conceived as teachers and sources of knowledge, rather than tools for learning" (Jonassen, Peck & Wilson 1999, p. 12).

This traditional view of technology-as-teacher treats interactive media primarily as a source of information, with its main role to somehow transfer that information to the students. The constructivist approach of this thesis argues for interactive media to be considered in the role of technology-as-partner, with its main role to simulate real-world problems and stimulate learning through activity. Instructivist approaches to journalism education and training do not make sense, given the practical nature of the profession and the value placed on critical thinking. Chickering and Ehrmann (1996) observe "learning is not a spectator sport", and this thesis echoes the argument that students learn better through activity rather than through instruction and memorisation.

Katzeff (1999) notes the importance of providing engagement and immersion in a learning process that uses interactive media. Katzeff criticises instructional designers for often failing to take full advantage of the opportunities offered by new media, even though "interactive media provide favourable conditions for learners to actively construct knowledge" within a contextual setting. She is especially critical of the materials produced for adult learners in a corporate setting, which provides a useful comparison to this project's development of journalism training materials in a University setting. Katzeff's arguments also follow the constructivist approach, arguing both for materials

that help people to actively engage in their own learning, and for interactive media that addresses the learner's needs and motivates them to learn.

Brennan similarly observes that some online materials fail to live up to their constructivist potential as "students are often expected to make the best of what they have and materials sometimes remain stagnant in their conception, flat in their design and unaccommodating in the styles of learning which they match" (2000). The *Flood* project is an attempt to make planned use of the unique abilities of digital media to generate interactive learning tools. It is a response to an absence of suitable tools in an educational environment where traditional materials and methodologies still dominate the resources prepared for online learning (Brennan 2000).

### 3.2. Flow and motivation

This project premises that engaging the participants is a critical part of effective learning. Prensky (2001) argues that many younger people find education an unengaging and painful experience because it does not take into account their learning preferences. He contrasts traditional approaches to education with the design of computer and video games, in which he suggests the primary objective of the game designer is to keep the user engaged. Critics of the video game industry have argued that interactive technology encourages compulsive behaviour, desensitises people to violence, and has a special "holding power or addictive quality" (Haddon 1999, p. 319).

It is precisely this holding power - the engaging qualities of computer and video games - that have attracted some educators and trainers to look at them more closely as a tool for learning. Chickering and Ehrmann (1996) tell the story of an educator who used technology to "steal students' beer time", by attracting them to spend more time on learning tasks instead of leisure pursuits. They add that the flexible delivery options

afforded by technology can also mean a more efficient use of staff and student time overall.

The holding power of video games is connected to the state of mind described by some psychologists as "optimal experience", or more commonly as "flow" (Csikszentmihalyi 1990). Flow is that moment when our skill levels allow us to engage with a challenge without feeling too anxious about failure, or too bored with success – that moment often described by sportspeople as being "in the zone". People can be so engaged with the task that "they experience an almost euphoric state of joy and pleasure in the process", losing track of time and becoming highly alert (Chamberlin 1998, para. 1). Csikszentmihalyi (1990) notes that some activities, including computer games, seem to be intrinsically designed to make that moment of flow easy to achieve. Many games seem to produce a state of concentration usually associated with meditation (BBC 2002).

Flow theory provides an important framework for understanding a student's motivation for learning (Rieber 1996, p. 48). It is a learner's unique motivation that helps them stay focused and pursue a goal (Andresen & Ahdell 2001, p. 42). Katzeff (1999, para. 5) emphasises the need for interactive educational media designers to consider motivation, as "no matter how well the material addresses the individual learner's needs, if the learner is not motivated to learn she won't".

There are two types of motivation – intrinsic and extrinsic (Deci 1975; Alessi & Trollip 1991). Intrinsic motivation is self-motivation that stems from a relationship between the individual and the reason for participating in an activity. Extrinsic motivation is driven by external factors such as a desire for verbal praise or tangible rewards like money. An inner drive and self-motivation to learn is preferable to extrinsic motivation, although external rewards are sometimes required to generate a minimal level of motivation (Andresen & Ahdell 2001, p. 43).

Quinn (1994, p. 49) suggests "the motivating effects of computer games provide a strong argument for their potential in instruction", although Dean and Webster (2000) warn that care must be taken not to assume that technology alone will automatically motivate students. Malone (1981) discusses the nature of intrinsic and extrinsic motivation in computer games used as learning tools. Extrinsic motivation occurs when the learning activity is separate to the fantasy element of the game. Malone argues in favour of games that are intrinsically motivating, where the learning activity is incorporated into the fantasy of the game. He considers this intrinsic motivation to stem from three components – fantasy, curiosity and challenge. Fantasy is the story framing the game activities, and should depend on skills required for the instruction (Andresen & Ahdell 2001, p. 44). Challenge depends on a level of difficulty that is enough to keep the learner interested in the task, without putting them off through frustration or lack of progression - a concept similar to that of "flow" discussed earlier. Curiosity is aroused by random factors or an element of chance; or by alerting learners to the fact that "their knowledge structures are incomplete, inconsistent or unparsimonious" (Andresen & Ahdell 2001, p. 44).

The *Flood* project incorporates intrinsic motivation consistent with these factors. The activity is framed in a fantasy context allowing the student to play the role of a journalist working for a fictional publication, and requiring them to use skills consistent with that role. The unusual nature of the training materials and the learning setting may be enough to arouse the curiosity of many students, but there are also elements such as the chatterbot (see Chapter Seven) and the unfolding hypertext narratives to engage their interest. The degree of challenge is pitched at a level that should present an interesting task for students with some experience, while not alienating students with minimal newsgathering skill. This can also be adjusted by varying the amount of assistance given to a class using the package, or the tasks set for the students by their teacher. The anecdotal and survey responses offered by several cohorts of students, outlined in Chapter Eight, indicate that

the *Flood* scenario provides an appropriate level of difficulty.

### 3.3. Constructing belief: Interactivity and immersion

Flew (2002, p.98) suggests that the development of home-based games consoles like *PlayStation* and *Xbox* "has drawn attention to the importance of developing media forms based around engagement and distraction, that draw the user away from 'reality' into a new thoroughly 'mediatised' space". Quinn's (1994, p. 49) model of game design includes the elements of engagement and immersion as factors contributing to the intrinsic motivation of computer games as learning tools. Engagement of the user with the media content can also be described as interactivity. Linder (1999) finds that engaged learning works well because it is "sticky" – it is experiential, and therefore more motivating and memorable than passive learning. As outlined in Chapter One, Murray (1997) argues that the interactive nature of digital environments stems from two factors, Firstly, they are procedural in that computers act as engines to embody complex behaviours and rules. Secondly, digital environments are participatory because they can respond to our input – we can induce certain rule-based behaviours.

Laurel's *Computers as theatre* (1993) steps away from looking at computers as merely procedural machines, and instead focuses on this possibility of user participation with the activities of the software. She considers computer games a natural application of the technology. They embody the designers' desires to have some interaction with, and influence upon, the screen outputs rather than be passive observers of data manipulation. Murray (1997, p. 12) also sees theatrical elements embedded in human interaction with digital media, such that "computers are providing us with a new stage for the creation of participatory theatre". Murray argues that computer users are gradually learning to do what actors do – play roles, impersonate others, and perform actions in a virtual world. This has parallels to the role-plays and simulations often utilised in journalism education

(see Chapter Four).

The idea of the computer as a dramatic medium is perhaps not as widely researched as its potential to create new forms of narrative. Frasca (2001a) argues that this is partly because researchers were inclined to apply existing literary theories to computer-mediated content, such as hypertext. Thus narrative held sway over drama, and "the videogame industry became closer to Hollywood and not to Broadway" (Frasca 2001a, p. 18). Nonetheless, Laurel argues for a more artistic approach to software design, using Aristotle's *Poetics* as a guide. She argues that the rules of drama outlined in that ancient Greek text can be applied to the design of video games and other software, because the computer is a medium for human activity – the user is an "agent" or performer.

Of special interest to this project is Laurel's interpretation of Aristotle's observation that "art represents *not what is, but a kind of thing that might* be; environments, objects, situations, characters and actions are represented within a wide range of deviation from real life" (Laurel 1993, p. 125). The ability of computers to represent, or simulate, elements of newsgathering/newswriting tasks and engage users in determining the outcome of their stories is central to the *Flood* project. Leyland observes that technology and imagination are both tools that can achieve engaging representations for learning, and perhaps the best software tools are those that emphasise the "player's imaginative journey through narrative" (Leyland 1996). As in real life, reporting stories using *Flood* is not a passive process but one in which the journalist must actively make decisions about what narrative they are pursuing or presenting.

The representational power of computers is apparent on many levels. We use metaphorical desktops, folders, and rubbish bins on our computer screens every day. Computers are capable of representing real or fictional worlds through video games and virtual reality software. Andresen and Ahdell (2001, p. 68) identify this as the "drama effect" of

educational software, by which users are engaged in the learning experience regardless of how "real" the elements are. Art allows for both realistic and abstract representations of the real-world, and computers are capable of delivering both to some degree. This has a direct relevance to this project, which is an attempt to support learning by simulating elements of real world experiences via a computer interface.

Interestingly, Laurel claims she is not a champion of video games and in fact finds many of them frustrating or overly violent. However, she observes that (next to Automated Teller Machines) computer games "have been the principal means whereby most people in the world have come into contact with computers for the first time" (Laurel 1993, p. 167). Computer operating systems often include free computer games, such as the *Solitaire* card game that came with Microsoft's *Windows* OS or the version of chess shipped with Apple's *Mac OS X*. Games are thus for many people a powerful introduction to the experience of "agency" – the ability to initiate action – that is an integral part of human-computer interaction. Murray also refers to agency as "the satisfying power to take meaningful action and see the results of our decisions and choices" (1997, p. 126). The notion of agency is important to this thesis, because it highlights the possible benefits of interactive multimedia training materials compared to passive text-based resources. It is consistent with the constructivist approach discussed earlier, in that it allows learners to interact with the materials to draw out meaning, rather than simply being handed the information.

In addition to describing the elements that contribute to interactivity, Murray (1997) identifies two properties of digital environments that contribute to their immersive nature. Firstly digital environments can be considered spatial. While linear media like books and film can describe or portray space, digital environments can be navigable. This is obvious in Web-based material for example, where even the names of the most popular browsing software (Netscape *Navigator*, Internet *Explorer* and now Apple's *Safari*) invoke a sense

of traversing an information landscape. Secondly, Murray notes that digital environments can be encyclopaedic. Vast amounts of data can be stored digitally, and re-presented as required. Thus digital media can draw on enormous quantities of information to provide high detail or seemingly endless scope, and can incorporate a range of media including images, video and audio.

Most importantly for this project, Murray argues that one of the pleasures of digital media is the potential for immersive experiences in which we are able to *construct* belief, rather than just suspend disbelief (Frasca 2001a, p. 18). In the context of developing digital training simulations, such as the *Flood* package, the quality of immersion has great significance in terms of engaging the attention of participants. It is important that students using the materials can readily place themselves in the required role, and develop an understanding of the fictional world of the scenario. They may have only limited class or study time to become familiar with the material before being required to produce assessable work. Quinn (1994, p. 50) believes that immersion can also contribute to the transfer of skills from the game world to the real world. A high level of immersion, in which the user "becomes lost" in the activity, can also be equated to flow theory as discussed earlier (Andresen & Ahdell 2001, p. 55). The *Flood* package requires students to use a variety of core journalism skills that can be transferred to real reporting situations, including interviewing, assessing the news value of stories and cross-checking information.

### 3.4. Artificial intelligence (AI) software in an educational setting

A striking example of the potential power of computers to contribute to immersive and interactive learning resources is the use of artificial intelligence software. *Flood* includes an experimental interactive element designed to allow students to pursue their own line of questioning of characters in the training scenario. The project incorporates a software

program known as a "chatterbot", designed to respond to text input from human users with replies that give the impression that a real person is answering. More detail on the history and operation of this software is provided in Chapter Seven.

Ryan (1997, p. 692) notes that the development of interactive narratives cannot rely solely on the setting, or the relationship of a single character – the user – to the environment; "there must be more than one agent to create a reasonably dramatic action". The problem for designers of interactive learning environments such as the *Flood* scenario is the need to make characters operate at a level that will assist, rather than hinder, the user's suspension of disbelief/construction of belief. While artificial intelligence research has produced some quite sophisticated approaches to the generation of interactive characters, it remains limited in its ability to analyse language and generate human-level responses. Ryan (1997, p. 693) suggests that chatterbots provide a "most promising strategy" to circumvent these limitations in the design of interactive narratives.

The application of "chatterbot" software-style to games can be seen in some of the earliest developments of entertainment-oriented software. Aarseth (1997, p. 12) notes the creation of the text-based computer adventure genre in 1976, with the release of the role-playing game *Adventure* by William Crowther and Don Woods (see also Appendix 1). The game required players to type text commands, such as "use sword", which the software would interpret and respond to. The development of better screen technology and processing power led to the development of graphical adventure games which reached the peak of their popularity in the late 1980's (Aarseth 1997). This project, with its reliance on low level interactivity (Ryan 1997) and branching narrative structures, can in some ways be seen to be a descendant of those early computer-based adventure games.

In the film *The Wizard of Oz* (MGM 1939), the magic of the great and powerful Oz, despite his desperate plea to "pay no attention to that man behind the curtain", is revealed

to be a technological flim-flam. Of particular relevance to the educational setting of this project is Murray's (1997, p. 219) comment that the challenge of creating chatterbot characters is "to distract people away from the machinery, to make the illusion more interesting than the technical wizardry". This philosophy applies more generally to the use of such software in the *Flood* project to distract users from the fact that they are simply navigating their way through pre-determined hypertext narratives.

The power of artificial intelligence software to "fool" human users during online conversations is evident in multi-user spaces such as online chat rooms or so-called Multi-User Domains (MUDs). Turkle (1997, p. 17) says "they are places where people and machines are in a new relation to each other, indeed can be mistaken for each other." Chatterbot software is one way of enhancing the learning experience offered by the materials produced for this thesis, for example by providing a more realistic mechanism for students to practise their interviewing skills. It is a mechanism for building high level interactivity (Ryan 1997) into the otherwise simple narrative of the *Flood* package, giving the training material an engaging quality more usually associated with computer games.

### 3.5. Digital Game-Based Learning

According to Schank (1997, p. 7) "everything that's wrong with training can be stated in four words: *It's just like school*." He proposes that the traditional educational model of lecture-based instruction is not an effective way of teaching practical skills, yet it pervades industry training because it is the system people are most familiar with. An alternative to the reliance on training manuals and classroom instruction is computer-mediated learning. This is now often catalogued under the neologism "e-learning" to reflect the growing use of Web-based or networked training systems. Perez (2001) asserts that "e-learning is a rapidly expanding market that is starting to take over traditional instructor-led and book learning", noting its ability to provide scalable self-paced learning, individualised

feedback and simulated environments.

However, simply migrating traditional learning materials to a computer delivered system is no guarantee that the learning opportunities are improved. Shepherd (2001, para. 2) argues that e-learning methods, like other more traditional teaching methods, can be passive and sterile – "in other words, they're just plain dull, and dull won't hack it with a generation reared on techno music, action movies and video games". He argues that computer games and simulations offer the opportunity to provide an engaging learner experience that builds real skills, but within a protected and supported learning environment. Prensky's *Digital game-based learning* (2001) trumpets the most evangelical of these claims that educators must now deal with the "Games Generation" - which he labels "Digital Natives." He contends that people under the age of 30 have grown up with digital technology and are proficient with its applications (Prensky 2002a). Dealing primarily with corporate training, Prensky assumes that on average most trainers are older than the trainees and that therefore there is often a generational/technological chasm between teachers and learners. For example, the current teaching generation grew up with books, linear film and TV, vinyl records and wired telephones. The Games Generation has grown up with video games, MTV music clips, CDs, the Internet, and mobile phones (Prensky 2002a).

Using the term "Digital Game-Based Learning" to describe his teaching framework, Prensky (Prensky 2001, p. 3) believes that:

- a melding of education and interactive entertainment will meet the needs and learning styles of new generations of learners;
- this material will motivate because it is fun; and
- this approach is adaptable and effective.

It is important to note that digital game-based learning does not simply mean using video games in a classroom environment, though that may be part of an overall strategy. Rather it describes the blending of digital technology (computers, multimedia, online) with an interactive activity that is engaging (even fun) to produce a learning outcome. That has been the approach taken with the *Flood* project, and forms part of the justification for labelling it a digital game-based learning tool.

### 3.6. Tools for learning, or "sugar-coated broccoli"?

Concerns about the use of video games as teaching tools range from potential physical consequences such as seizures and repetitive strain injuries (Dorman 1997) through to doubts about their educational value and benefit over traditional teaching methods (Jacobs 1992). Smith, Curtin and Newman (1997, Discussion, para. 11) argue that some educators have adopted a siege mentality when it comes to the computer and computer games, pursuing an unconvincing "business as usual" approach in the face of obvious change. However, they suggest there is scope for an optimistic vision of technological change that "in no way suggests that all educational theories and practices to date are by definition wasted or misguided". In this positive sense, the *Flood* project seeks to complement and enhance existing journalism training practices, rather than impose a completely new model.

One criticism of the use of computer and video games as a learning tool is that they create a perception among students that "all learning must take a gaming approach and be 'fun'" (Dorman 1997, p. 135). Instructional games may be simply sweetening the learning of difficult ideas, sending questionable messages about learning to students playing those games (Kafai 2001). However, game developers argue that this perception of educational games as "sugar-coated broccoli" (Thomas 2002) ignores their teaching potential, particularly when applied in a constructive rather than instructive manner. The

*Flood* project allows students to construct their own narratives in the fictional world of the scenario. It is not intended to be "fun", but rather an interesting platform for engaging students with the techniques and knowledge applied to newsgathering and newswriting tasks.

Of course, it is also true that some teachers and students may simply prefer traditional teaching methods, such as lectures, instead of simulations and game-based tools (Seay, 1997). Some researchers question the notion of computer-mediated communication in teaching that replaces human interaction (Smith, Curtin & Newman 1997). Although concerns in this area tend to stem from the literature on teacher education (see for example Holden & Wedman 1993; Myrdal 1994), it raises similar questions about a "people-based" profession like journalism. As one journalism educator states, "journalism students need to get out on the street to meet with real people to hone their skills" (Eric Loo, pers. comm., May 2003). While there are applications for simulation tools like *Flood*, it is not intended to completely replace conventional face-to-face journalism instruction, interviewing exercises, production tasks or internships.

Petranek (1994) found that some of his tertiary-level students "wanted to take notes and to study for a multiple-choice test" rather than participate in simulations. It is also possible that the limited class time usually devoted to such simulations (Seay 1997) or technology-driven interactions (Smith, Curtin & Newman 1997) may limit their overall effectiveness for learning and teaching. A training tool like the *Flood* scenario is probably more effective when it is used several times with different tasks, supported by class de-briefings (Seay 1997).

Time is always a problem in educational settings. Some educators argue that the use of simulation and gaming (computer-based or otherwise) in the classroom requires significant preparation and planning, which may in part explain why more traditional methods such

as lectures persist (Seay 1997). In addition to staff time, it is also argued that video games "displace time that could be spent reading or pursuing other educational activities" (Dorman 1997, p. 134), emphasising the view of games as entertaining distractions rather than educational tools. It should be noted that most studies of the effectiveness of games have been focussed on kindergarten and elementary education, rather than professional training (Kasvi 2000). However, research in this area suggests that following an initial and temporary "novelty" period, children do not play video games at the significant expense of other activities (Creasey & Myers 1986; Wiegman & van Schie 1998).

Leyland (1996) notes that the use of technology to engage students can lie outside the means or budget of educators, resulting in a gap between expectations and resources. The cost of technology clearly contributes to reservations about the use of video games in the classroom (Smith, Curtin & Newman 1997), such that even pro-technology teachers and trainers rely on imagination rather than multimedia tools to engage their students. In Digital Game-Based Learning (2001, p. 357), Prensky glibly describes the potential price range of training software: "how much does Digital Game-Based learning cost? The answer is an easy one – between $300 and $3million". Some game solutions can be cheap, even free, but the development costs of high-end educational materials can be the equivalent of big budget commercial game projects. Prensky's pitch is clearly aimed at a corporate environment with large training budgets, but prototype projects such as *Flood* indicate that the digital game-based learning approach is not entirely beyond the reach of the more impoverished end of education and training.

Some resistance among educators and trainers also flows from more general community concerns about negative consequences of video games, such as violent behaviour and gender stereotyping. These social concerns, and their relevance to the *Flood* project, are discussed later in this chapter.

### 3.7. Aliens in the classroom – Prensky's "Digital Natives"

Green and Bigum (1993) suggest that new technologies, especially computer and video games, have impacted so greatly on some young people that some teachers feel they are now confronted by "aliens in the classroom". Katz argues that new forms of popular culture, mostly involving computers, have developed so quickly that there has evolved "perhaps the widest gap – informational, cultural and factual - between the young and the old in human history" (Katz 2000). Katz notes that while many adults insist they have lessons to teach the next generation, all they may have to offer are boring and outmoded educational systems. Both Katz and Prensky use the image of a chasm to illustrate this supposed generational divide, but interestingly each places games in a different role. Katz (2000) places gaming at the "centre of this chasm", citing its increasing cultural influence as a major factor in the widening gap between young and old. Prensky, however, sees video and computer games as a bridge across the gap, allowing better communication between the generations (Prensky 2002a).

Prensky argues that this generational chasm manifests itself in ten basic cognitive changes apparent in the Games Generation. The potential implications for teaching and learning are outlined in Table 3.

**Table 3: Ten learning preferences of Prensky's "Digital Natives" (from Prensky 2001, 2002a).**

| | Digital natives prefer: | Traditional training provides: | Learning implications: |
|---|---|---|---|
| 1 | "Twitch" speed | Conventional speed | Students desire faster interaction with information (game speed). |
| 2 | Parallel processing | Linear processing | Students desire multitasking, processing multiple data simultaneously. |
| 3 | Graphics first | Text first | Students desire graphic information with a text backup. |
| 4 | Random access | Step-by-step | Students prefer hyperlinking through materials, rather than reading from beginning to end. |
| 5 | Connectivity | Stand alone | Students prefer networking, and high level of electronic communication. |
| 6 | Activity | Passivity | Less tolerance for passive instructional situations - learn by doing. |
| 7 | Play | Work | Students see computers as toys as well as tools; prefer to learn in a fun environment. |
| 8 | Payoff | Patience | Expect immediate and clear feedback or reward in return for efforts. |
| 9 | Fantasy | Reality | Fantasy and play elements are an accepted part of "serious" work, e.g. informal work settings. |
| 10 | Technology-as-friend | Technology-as-foe | See technology as empowering and necessary. |

This summary of the generational differences between the teaching and learning generations is supported by Fromme (2001, p. 2), who also argues that "parents and teachers tend to address the media cultures of the younger from their own generational perspective" while ignoring the digital media literacy of children and young adults. Table 3 clearly illustrates potential obstacles to learning that may arise from the use of teaching methods that do not account for generational differences in changing media cultures. Educators and trainers "ignore or slight the Nintendo generation, or indeed demonize

them, at their own peril" (Green, Reid & Bigum, 1998).

The *Flood* project is designed with many of these learning preferences of "digital natives" in mind. For example, it combines different types of media and delivers them quickly and on demand via the random access and multimedia capabilities of the Web-browser software, thus mirroring the "twitch speed" factor of many computer games. The use of the Web interface also provides a random access and graphical environment, and it allows for the parallel processing of different information sources or narrative lines. The *Flood* scenario encourages activity from the students, as it is designed to be used as a practical tool requiring them to pursue storylines and produce news stories. It has a fantasy and role-playing element that is consistent with a play environment, rather than work or formal training. The underlying theme of this thesis is that the technology should be seen as a friendly partner in the learning experience, rather than a foe to be overcome or avoided.

Some elements of the learning preferences outlined in Table 3 are not so fully addressed in the current version of the *Flood* scenario, though this is largely due to the limitations of my programming skills and the resources available for the project. For example, although the scenario is designed for delivery on the Internet, it does not incorporate communication functions to allow or require students to work online in a collaborative manner. The prototype training package also includes limited immediate "payoffs", apart from hypertext linking or responses from the chatterbot software. However, these are both areas that could be developed. Possible improvements to more fully address Prensky's learning preferences are canvassed in Chapter Nine.

While proponents of gaming technologies argue that the development of new digital learning tools is the only way to satisfy the "Games Generation", the teaching utility of digital games is not beyond debate. Poole suggests "the only thing that everyone agrees

on is that playing videogames makes you better at playing videogames" (Poole 2000, p. 26). Squire notes that enthusiastic pronouncements were made about the potential for radio, film, TV and computers to revolutionise learning, "yet the overhead projector continues as the most pervasive piece of technology in most classrooms" (Squire 2002, p. 1). However, that will change as digital infrastructure is developed in the education sector, and cheap yet powerful computer equipment becomes a genuine alternative to low technology approaches.

Some of the questioning of the value of computer games in education centres on whether they benefit learning, or simply prove a distraction. Stoll argues that "compared to running games on a computer, reading is boring. If homework means playing computer games, kids will love it" (2000, p. 49). Confusing the debate further is the fact that not all computer-based learning is fun. Schank (2000) suggests that much educational software is based on boring "drill and practice" concepts rather than the potential for "exploration, simulated experience, learning-by-doing and hypothesis testing" available with contemporary technology. At a policy level, computers are often introduced inappropriately into classrooms because educators and politicians see them "as a way of improving education without really knowing why" (Schank 2000).

Digital game-based learning should not be seen as a cheaper alternative to real teachers. There is research to suggest that a hybrid mix of face-to-face and online teaching can be more effective than either delivery method alone (Brown 2001; Cashion & Palmieri 2002, p. 3). This thesis follows the constructivist argument that "students cannot learn *from* teachers or technologies" (Jonassen, Peck & Wilson 1999, p. 2), but rather learn by doing and thinking. One aim of practical journalism training materials is to help students think like working journalists, and such thinking is engaged by the simulations and activities made possible by interactive materials like the *Flood* training scenario. Its aim is to complement, not replace, existing approaches to journalism instruction.

### 3.8. Social research & video games

While looking at the potential educational benefits of video games, it is important to note that these games do produce mixed reactions among researchers and the wider community. Southern (2001) suggests "almost since their inception, videogames have been met with rampant prejudice, legislation and stigma". Research in this area is limited compared to studies of the impact of other media, notably television and cinema, though researchers are taking an interest in video games because they are "an increasingly pervasive part of the modern landscape, but we have no way of speaking critically about them" (Poole 2000, p. 25). Much of the limited social research into video games to date has come from the media effects tradition, with other approaches - such as the impact on learning and behaviour - poorly represented (Squire 2002, p. 12).

Social research into the effects of video games tends to draw on studies of violent media content in general. Wright (2000b, para. 9) notes that this fails to take into account the interactive qualities of games, and the fact that gaming technology changes so rapidly, although "some fear that because games are such an effective learning medium, the effect of game violence is even greater than similar content shown on television or in movies". One study suggests the teaching power of games may serve to reinforce aggressive behavioural "scripts", particularly among males, which are then played out during personal conflicts or social problem-solving (Anderson & Dill 2000). Freedman argues that such studies examining links between games and aggression may be fundamentally flawed, as it is difficult to make comparative studies of video games when no two are really equal:

"the lack of comparability of the video games is not a subtle or picky criticism - it is absolutely basic to the design and interpretation of the research because it leaves open the

interpretation of any difference that is found between conditions" (Freedman 2001, The choice of games, para. 8).

Squire (2002) accuses researchers of making an "illogical leap" to correlate game aggression with a capacity for mass murder, and points to the often contradictory research into this area. While Smith, Lachlan and Tamborini (2003) agree that some early research into games and violence found a relationship and some did not, they observe that games from 15 years ago were much less violent in nature than those available in today's market. Modern computer and video games are highly sophisticated and often realistic texts, associated with increasingly violent themes (Vessey & Lee 2000). One survey of 70 games found 89% contained some kind of violence, and 49% featured violence that could be classified as "serious" as opposed to comic or slapstick (Children Now 2001).

Carroll notes that computer games may draw criticism as a result of the "carnivalesque excess" demonstrated in many titles - especially the flaunting of social rules, levels of gore and violence, and a general element of bad taste (Carroll 2002). Haddon (1988) notes the "moral panics" that first surrounded arcade games in the late 1970s and early 1980s. These included the issuing of formal health warnings in the US, a Presidential order to destroy games machines in the Philippines, and a political campaign to control video arcades in Britain. The politicisation of certain perceived threats caused by computer and video games was fuelled by the early lack of disciplined studies into games and gaming culture. Squire notes that the much of the rhetoric associated with social research in this area has much less to do with any real knowledge of games than with general fears about violence in culture – particularly American culture (Squire 2002, p. 2). As Wright (2000b, para. 8) observes, "what one finds in the research on game violence mirrors research on almost any subject: a lot of differing opinions and results".

A decade after his first survey of the industry Haddon (1999) notes that many of the fears

surrounding the early arcade games were transferred to the home computer and console versions that followed. These included concerns about the possible addictive nature of the games, levels of violence in game content, and the social groupings formed around game-playing (especially the "gang" element in video arcades). Typical of this social-risk approach in Australia is research on the "aggressive content" of games for the Office of Film and Literature Classification (Durkin & Aisbett 1999). This report identifies the range of concerns that have circulated around video games - such as addiction, violence, and gender bias – but does not offer any compelling evidence that they warrant particular criticism (Marshall 2002).

Many of these fears seem to be fuelled by a perception that the underlying technology of games has a special impact on players. There have been concerns about the potential physical problems associated with the repetitive movements required by some games, and the design of game controllers (Wills 2002). More recently, some effects research has attempted to identify links between the interactive nature of games and aggressive behaviour (Marshall 2002, p. 268). This focus stems from a belief that children are theoretically more susceptible to behavioural influences when they are active participants rather than observers (BBC 2000). Nonetheless, the scapegoating of games as a causal factor in violent incidents, such as school shootings, "is a gross oversimplification of the complex problem of youth violence" (Wright 2000a, para. 3). A U.S. Surgeon General's report on youth violence (2001) found that the impact of video games on violent behaviour is yet to be determined by serious research. Nonetheless there is a growing body of research indicating a relationship between sustained exposure to violent media and real-life aggression in some people, and some researchers believe the interactive nature of games could increase the likelihood of aggressive behaviour (Children Now 2001).

*Flood* averts many of the social concerns raised about video games because it is primarily a web-based journalism training tool, rather than an entertainment-oriented

game product. However, the potential to develop more "game-like" materials from this prototype requires some examination of the issues raised by the literature in this area. For example, while digital game-based learning materials may not raise as many concerns about violence as some commercial video game releases, the fact that training resources may attempt to simulate real and potentially violent or graphic situations gives cause to consider the possible negative effects. Given that violence and disaster are increasingly popular topics for media coverage (Maxson 2000), games and simulated environments may provide a controlled means of training students to deal with traumatic or dangerous situations.

Another criticism levelled at computer and video games is that they are biased towards male interests, and contribute to a more general perception that technology is a male domain (Durkin & Aisbett 1999, p. 128). Female characters are severely underrepresented in video games, accounting for as little as 16% of all characters (Children Now 2001). Games, like many forms of media, place female characters in stereotypical roles as sexual objects, evil femme fatales, subordinates, or helpless victims (Dietz 1998).

While games have long been marketed primarily at male consumers (Mediascope 1999), there is evidence that females are a large potential audience – up to 43% of computer game players according to one survey (IDSA 2002). An executive of the company developing the online version of the popular computer game *The Sims* described the average player as a woman aged 18 – 28 (Manqis 2003). In their Australian study, Durkin & Aisbett (1999) found 48% of women and 89% of girls aged 12-17 years play computer games. Other research claims 74% of girls using computers spend some time playing games online (Valenza 1999). Arguably many designers and marketers take games originally designed for boys and simply "paint them pink" (Children Now 2000, para. 11) for a female audience. Some studies have shown that girls prefer computer games with non-violent themes, with an empahsis of puzzles, problem-solving, spatial awareness and cooperative

play (Children Now 2000, para. 15).

These trends have significance for the *Flood* project, not the least because the majority of students undertaking journalism courses are female. Patching (1997b, p. 135) found "there are twice, and in some cases three times, as many women studying journalism as men" on Australian campuses. Of the 45 undergraduate students who used *Flood* in 2002, 70% were female with an average age of 19. A survey of this class, discussed further in Chapter Eight, found that 42.2% played computer or video games. Although there was no explicit consideration of gender during construction of the *Flood* package, a subsequent audit found a fairly even distribution of male and female roles. Of the 33 active characters that may be encountered in the scenario, 19 are female and 14 are male. The female characters encompass a range of roles including a policeman's wife, senior and junior emergency services personnel, a school principal, railway worker, and the director of the medical helicopter service. The nature of the training package places these female characters in the role of interviewees, spokespeople or general sources of information. Feedback from students using the scenario did not reveal any user concerns about gender roles.

### 3.9. Summary of Chapter Three

This chapter has reviewed literature in a number of areas central to this thesis. The *Flood* project exemplifies the potential power of digital media to create engaging materials that allow students to actively construct understanding, rather than simply acquiring knowledge. Digital game-based learning draws on this constructivist approach as an alternative to traditional lecture-based teaching.

The engaging and immersive nature of video games equates to so-called "flow theory", giving added weight to the argument that they have a positive role to play in educational settings. Digital environments have unique qualities that enable them to intrinsically

motivate users to complete tasks and engage with the material. The digital environment is also one in which interactivity and immersion can intersect to create powerful simulations of aspects of the real world. The use of artificial intelligence software in simulations can contribute to the user's suspension of disbelief/creation of belief and immersion in simulations.

Digital game-based learning – the use of interactive and engaging digital media as a learning tool – seeks to take into account a perceived generational gap between teachers and learners. It is argued that an emerging "Games Generation" has developed a different media culture based on familiarity with technology as both a toy and a tool. In designing new digital training materials consideration must be given to concerns about the possible negative effects of video games, although much research remains to be done in this area.

The next chapter examines the role of simulations and hypothetical exercises in journalism education and training, providing a context for the development of digital media resources to complement and enhance this approach.

## CHAPTER FOUR

# JOURNALISM HYPOTHETICALS AND CLASSROOM SIMULATIONS

This chapter looks at attempts to replicate "real world" experiences of journalism within a university setting, through the use of publications and productions. It also examines some of the traditional approaches to simulating journalism experience, providing a context for the development of new media approaches such as the *Flood* package to enhance learning experiences and outcomes.

### 4.1. Publications and productions: giving students a taste of the "real world"

One of the defining features of journalism education in a university setting is the requirement that students demonstrate their understanding of core skills by producing professional work (Burns 1996). Writing tasks assess writing skills. Research exercises test research skills. Conducting an interview demonstrates interviewing abilities, and so on.

Sometimes this skills assessment is managed in the form of student publications or broadcasts. At other times it is in the form of relatively straightforward classroom writing exercises. In some cases mock news conferences or simulated news events are used. Regardless of the form it takes, teaching effective professional practice necessarily involves a degree of simulation of those practices (Ester 2000).

This thesis is concerned with representations and simulations, and it is not intended to canvas in detail the use of internships, professional placements and work experience. It should be considered however that these activities do form part of an overall strategy of

exposing students to the "real" work of journalists, and are often a valuable foot in the door to employment (Patching 1997b, p. 71).

Stuart's history of Australian journalism courses to 1987 illustrates the diversity of tertiary journalism training, and the lengths that some institutions take to provide a training environment that replicates the "real world" as closely as possible. In some cases this approach was due to the reliance on working journalists to teach subjects, or the involvement of bodies such as the Australian Journalists' Association (AJA) in curriculum development. In other cases the desire to produce employable graduates seems sufficient incentive to try to "replicate industrial practice as much as possible" (Stuart 1997, p. 48).

Given that most people teaching journalism in Australia - an estimated 95% in 1997 - have had experience working in the mass media (Patching 1997a, p. 34), it is not surprising to find significant emphasis placed on learning vocational skills in these courses. Most working journalists are required to be able to produce some form of product, so it seems natural to put journalism students through a rehearsal production process. Indeed, Meadows (1997, p. 94) suggests that the strong vocational orientation of some journalism courses has placed them in an uneasy relationship with the academic disciplines that surround them in the University environment. Herbert (1997) also examines some of the ambiguity of journalism education's status with industry and other academic disciplines, concluding that journalism schools needed to "rededicate" themselves to the needs of the profession.

Patching's review of the academic workloads of Australian journalism educators highlights the hands-on nature of many journalism subjects, and the use of practical or production-based assessment methods in journalism courses. The reliance of many courses on weekly writing tasks and/or production of print, broadcast and online

publications produces an assessment load that "is much heavier and more consistent than that required for traditional liberal arts subjects" (Patching 1997a, p. 39). Why would journalism academics make a rod for their own backs unless there was the perception that vocational skills were of great importance?

The journalism classroom often departs from a "chalk and talk" theoretical focus. Stuart (1997) describes how from the early 1970s some Australian journalism courses were providing students with access to on-campus radio and television facilities, or entering into arrangements with local broadcasters. Many were also using both regular and ad hoc campus-based publications as teaching tools, or developing publishing relationships with local newspapers. At the high end are quality production-driven projects such as The University of Queensland's *Queensland Independent* newspaper, Charles Sturt University's National Radio News service, and Queensland University of Technology's nightly TV news broadcasts (Patching 2002).

Table 4 shows a sample of the vocationally-oriented publications and projects being produced on Australian campuses today, as journalism schools utilise studios, desktop publishing spaces, and computer laboratories as their classrooms. Patching's survey of outlets for students' practical work in 1996 found that more than half of the 22 institutions contacted had an outlet for radio production work, while a much smaller number (3) offered some television production experience beyond the level of mock exercises. Of the same institutions, 19 offered regular or occasional print publications (Patching 1997b, p. 65).

**Table 4: Sample journalism course publications and production projects.**

| Institution | Publication / Project | Format |
|---|---|---|
| Charles Sturt University | | |
| | *CSU news* | Online (video) |
| | *Western Advocate* | Print |
| | National Radio News | Radio |
| | 2MCE-FM | Radio |
| Curtin University | | |
| | *Perth Independent* | Print |
| | Curtin Radio | Radio |
| | Access 31 | TV |
| Murdoch University | | |
| | *EMU news* | Online |
| | Murdoch Radio | Radio & online (audio) |
| Queensland Institute of Technology | | |
| | *Communique* | Online |
| | Radio 4EB | Radio |
| | Briz31 | TV |
| RMIT University | | |
| | *Fifth Estate* | Online |
| University of Queensland | | |
| | *In Site* | Online |
| | *Briz News Online* | Online (video) |
| | *Queensland Independent* | Print |
| | 4RPH | Radio |
| University of South Australia | | |
| | *magnet* | Online |
| University of Technology, Sydney | | |
| | *Online Journalism* | Online |
| | *Reportage* | Online |
| | 2SER-FM | Radio |

The quantity and quality of this student output is recognised by the annual Ossie Awards for student works awarded by the Journalism Education Association (JEA). Membership of the JEA is drawn primarily from journalism teachers in Australia, New Zealand and the South Pacific (JEA 2001). In 2002, there were twelve award categories for undergraduate and postgraduate print, TV and radio productions. These categories span news reporting,

print features and broadcast current affairs. There were also awards for best regular and occasional student publications in any medium (JEA 2002). The diverse award categories point to the range and volume of practical journalism being undertaken by undergraduate and graduate students on Australian campuses.

It is worth noting that while the Ossie Awards are yet to include a specific category for Internet-based publications, more and more journalism schools have moved to include elements of technology and new media production as part of their practical training (Nicholson 2001). Jonassen, Carr and Yueh (1998) argue students learn more as producers of materials than they do by studying them, and "designing multimedia presentations is a complex process that engages many skills in learners" such as project management, research, presentation and reflection.

Journalism schools have not evenly embraced online publication, as they respond to the potential of the Web in "fits and spurts" (Sutherland & Stewart, 1999). Nonetheless there has been constant revision to curricula over recent years to accommodate the teaching of multimedia and online publishing skills (Blake 2000; Huesca 2000; Nicholson 2001), and many courses now use the Web as a medium for publishing student work (Patching 1997b; Nicholson 2001). As well as introducing students to online publishing processes, this opens up opportunities to publish to a wider audience. It can also prove a more cost effective way to manage student publications, compared to the increasingly prohibitive expense of hard-copy print runs (Friedland & Webb 1996).

There is also the potential benefit of creating a culture in which students more readily accept computer-based or online delivery, paving the way for the introduction of digital media-based training resources. There is some resistance to distance education methods on the basis "that no one wants to learn from a computer" (Cravotta 2003), and students still prefer an element of face-to-face contact with a teacher in technology-supported

classes (Brown 2001; Cashion & Palmieri 2002). The *Flood* scenario has been used with both on-campus and distance education students, as outlined in Chapter Eight.

There are other examples of diverse approaches to giving students realistic experience within the constraints of the classroom and University budgets. Pearson (1993), for instance, describes his use of e-mail as a medium for regular student publications at Bond University in the early 1990s. The Bond students produced three news bulletins a week, which were distributed via the campus e-mail system. Real news for a real audience, produced in a manner that was a genuine challenge for the students, and delivered in an innovative and inexpensive way.

While the use of publications and broadcasts is a logical and long accepted approach to giving journalism students valuable pre-graduation experience, it must be remembered that simply doing something does not guarantee learning (Burns 1997, p. 59). Some media educators have turned to simulation training scenarios as part of a pedagogical approach that seeks to develop deeper problem-solving skills (Burns 1994, 1996; Mackey & Phillips 1997; Marks 1999; Maxson 2000).

### 4.2. Simulated experience in journalism education

In addition to newsgathering assignments, mock media conferences or hypothetical reporting scenarios have been used in a wide variety of contexts at many institutions as a means of teaching media skills and assessing student competencies (Burns 1996).

Green suggests that simulations may be a particularly appropriate strategy for journalism education given the industry approach "of throwing people in at the deep end" (Green 1991, p. 92), although he adds that adequate planning and supervision are required to make simulations a powerful teaching tool. He also notes that some skills, such as reading

critically or writing logically, don't readily lend themselves to a simulation format (Green 1991, p. 92).

The "sink or swim" approach of many newsrooms is superficially allied to the problem-based learning (PBL) approach to journalism education. This teaching and learning philosophy requires students to acquire knowledge as they tackle problematic situations, "thus reflecting the real way in which knowledge is generated in the world" (Meadows 1997, p. 98). PBL is a constructivist approach to education, in that it requires students to actively engage in the construction of their own knowledge through problem solving and reflection.

While the *Flood* project is not designed as a stand-alone PBL exercise, it could certainly be used as the catalyst for such an approach; the main requirement is that the problem be presented before students have learnt basic concepts, not after (Albanese & Mitchell 1993, p. 53). The *Flood* scenario has been used in this way in trials at Charles Sturt University, in which first-year students were required to find, research and write news stories based on the material encountered in the package with minimal instruction from their tutor. Further details of those trials are given in Chapter Eight.

McGrath (2002) identifies the reluctance of some administrators to pursue a PBL framework because it is seen as being more time and resource intensive than traditional lecture-based teaching. These are similar concerns to those discussed in Chapter Three surrounding the use of simulations. Online or CD-ROM resources like the *Flood* project may be a way of addressing that barrier, as they can be used for exercises that occur outside of class or contact times, although they require time and resources to design and construct. The Web provides a means of enhancing the knowledge acquisition aspect of teaching, "so that the students' face-to-face time with the instructor is freed for open ended, exploratory, problem-solving discussions" (McGrath 2002). There may also be a

role for tools like the *Flood* package as part of intensive skills-based workshops, which can be used to prepare students for PBL learning (Meadows 1997, p. 101).

Burns (1997) argues that simulated exercises can provide a strong platform for incorporating PBL into journalism education. The use of mock news conferences and similar hypothetical newsgathering exercises "places students in the active role of problem solvers (practitioners) and confronts them with a situation that reflects the real world" (Burns 1997, p. 60). Students are required to adapt to the situation that unfolds around them, and make decisions on the run as would be expected in their working life as journalists.

Educators should also take care that the curriculum doesn't seek simply to mirror the newsroom practices of the media themselves, to the exclusion of a more critical framework within which students can form their own opinions about their professional roles (Meadows 1997, p. 93). Meadows suggests that this necessary blending of hands-on practical experience and critical reflection can be addressed by using simulated exercises as part of a well-structured problem-based learning approach.

Pearson suggests that there needs to be a balance between giving students a taste of deadline pressure, and the need to spend time more profitably fine-tuning core journalistic skills such as research, writing and editing (Pearson 1993, p. 133). While journalism teachers may wish to expose their students to as much real world experience as possible, there is also a need to effectively manage academic resources. The Web-based newsgathering exercise developed for this project is an example of trying to produce re-usable and flexible materials that simulate real world experience within a controlled environment.

It should also be noted that it is not practicable or desirable to send students to practice reporting skills at every news event that comes along. There are the practical considerations

of time, cost, safety, geography and access. There are educational concerns such as supervision, assessment and the desire for analysis or discussion of the work being done. For example in a classroom situation the teacher can observe the work being done, and interrupt an exercise or activity to clarify instructions or suggest ways of tackling a task. A classroom is a reasonably controlled environment, and students can be set similar tasks to enable fair assessment of their relative abilities. Students have an opportunity to ask questions about what they are doing, and the teacher can monitor the contributions of individual students. Coverage of real events does not often easily accommodate these aspects of teaching and learning. Patching (2002) also notes that even formal opportunities for student involvement in events like the Olympic Games may place students in media positions so junior or menial as to render the experience meaningless. Hence journalism educators have long used classroom scenarios or simulations to give a measured sense of what it is like to "do" journalism. Accordingly the fictional toll from the accidents, fires, cyclones, and plane crashes written about in newswriting classes around the nation must be frighteningly high each year. Training resources like the *Flood* package can simulate these events as and when required, and without the physical dangers.

At a basic level, many newswriting classes rely on handouts of written outlines or lists of facts from which students then prepare news stories. Another common approach is for students to interview each other as they take turns to play the roles of journalist and interviewee. However some educators have sought to add a more dramatic touch to these exercises, in an effort to make the experience more realistic for the students.

Deakin University and the University of Western Sydney (UWS) pooled resources in 1996 to utilise video conferencing as a means of simulating a news conference situation (Mackey & Phillipps 1997). The joint project stemmed from an established annual simulation exercise at Deakin in which public relations and journalism students were able to meet and interact during a mock crisis scenario, giving students a taste of the

difficulties faced by practitioners on both sides of the story.

Problems with using students in role-playing simulations became apparent in the shared Deakin/UWS videoconference experience. The Virtual Crisis Game simulation required considerable imagination on the part of participants to appear plausible and "some students don't get into the spirit of the game and niggle about technicalities" (1997, p. 156). Inconsistent student preparation and involvement, technical glitches and difficulties organising staff across different campuses (in different States) contributed to a problematic situation. On the other hand, Mackey and Phillips observe that students will take even implausible situations in their stride if there are sufficient marks attached. They note simulations provide an interesting break in routine for both staff and students, and an opportunity to provide experiential teaching to supplement theoretical or book learning (Mackey & Phillips 1997, p. 156).

Whether based around real coverage of stories for broadcast or publication, or simulated exercises involving peer-to-peer role-playing, Burns reminds us "neither of these scenarios is 'real' in terms of replicating the experience of a practising journalist" (1996). She favoured the use of paid actors to play the role of interviewees in mock media conference scenarios for students at Newcastle University (Burns 1994). This removed some of the social dynamics at work when students interview each other, and allowed students to more easily suspend their disbelief and take their simulated roles more seriously (Burns 1994, 1996).

A clear advantage of a computer-mediated simulation like the *Flood* package is that it removes problems associated with peer-to-peer role-playing. The simulation contains the characters required to complete the exercise, and students can participate as would-be journalist practitioners rather than having to pretend to be spokespeople or interview talent. Requiring students to act out these roles just to get the simulation working can be

awkward in a class situation, and proves impractical for distance education cohorts. The future development of artificial intelligence agents, as foreshadowed by the chatterbots in the *Flood* project, could also provide a cheaper and more convenient alternative to hiring professional actors to participate in training simulations. Web-based or CD-ROM delivered simulations are also free of many of the logistical difficulties apparent in cross-institutional projects like the Virtual Crisis Game, such as co-ordinating transport and real people to play key roles.

### 4.3. Summary of Chapter Four

This chapter examined strategies employed by journalism schools in an effort to replicate real world experience, the problems they encountered and their resolutions, providing a context for the inclusion of digital game-based learning materials.

In particular:

- journalism schools make use of a range of print, broadcast and online publications to provide students with outlets for vocational experience.
- The act of doing something does not necessarily result in learning; hence some educators try to add value to practical work by adopting a problem-based learning approach, often using simulations.
- The use of mock newswriting/newsgathering/news conference assignments is common in journalism schools, but there can be problems engaging students in the spirit of the exercise. This is more likely to be the case when peer-to-peer interviewing or role-playing is required.
- The history of using simulations and hypothetical situations in journalism classrooms provides a solid context for considering the introduction of computer-based materials to enhance the effectiveness of this approach.

## CHAPTER FIVE

# PUTTING GAMES TO WORK

This chapter discusses further the relevance of using digital game-based journalism training materials to enhance the learning experience for an emerging generation of digital media oriented students. There is also a discussion of the fuzzy distinctions sometimes made between games and simulations. An outline of some existing Web-based journalism training resources is provided, and consideration is given to the design inspiration that transfers from games to learning materials. Finally, this chapter describes the emergence of a new genre of game that uses a range of media to blur the boundaries between fictional narratives and real-life problem-solving.

### 5.1. The Games Generation

This thesis premises that journalism training simulations will need to become more sophisticated and media rich in order to stimulate and engage students, and account for their preferred learning styles. Cooper (2000) observes the need for online courses "to meet the educational needs of a fastpaced, computer-literate society". Bressers and Bergen (2002) note college students make heavy use of digital media as "this technically savvy demographic group also has abundant campus resources, making computers and Internet access pervasive".

The different learning styles of these "digital natives" (Prensky 2002a) outlined in Chapter Three are becoming more apparent to educators. Laird (2003, p. 42) describes how her online students prefer to randomly access course components rather than follow a sequential order, expect fast information delivery, and demand immediate feedback – all characteristics of the cognitive changes evident in the "games generation" (Prensky 2001)

and detailed in Table 3 in Chapter Three. Wagschal (1997) and Johnson and Orr (1999) refer to "Generation-X" and "N-Gen" students and their expectations of and demand for stimulation in the classroom.

Evidence of these changes surfaces in the literature as an expression of frustration from educators about how students use technology, such as Laird's criticism that "to their detriment, many of these students fail to consider that Web learning is different from Web use, particularly in a skills-based course" (2003). Teachers are already dealing with students who see nothing wrong with using their mobile telephone in class (Hinton & Manathunga 2001; Leone 2002). Many young adults appear to treat computers, *PlayStation*, and mobile phones with a casual familiarity because, as Alan Kay notes, "technology is only technology if it was invented after you were born" (in Prensky 2001, p. 38).

Chapter Four examined the importance that simulated vocational experience has traditionally played in journalism education and training, and one possible interface between this teaching tool and technology is in the area of video games. Contemporary computer games are pushing further into realistic simulation through graphics, animation, sound and interactivity (Turkle 1997, p. 68). Similarly, games designed for proprietary console systems, like Sony's *PlayStation* are increasingly being considered for educational use (Kirriemuir 2002). Perhaps as a backlash to this potential softening of the hard-core gaming image of its system, Microsoft explicitly states that the *Xbox* "is a games console" and the company's content development programs will not nurture non-game titles (Microsoft, para. 12). Nonetheless, video games are increasingly gaining serious attention as training tools in a wide range of disciplines. The evangelists of digital game-based learning remind us that young adults today have not known a world without computers, video games, special effects laden movies, and rapid cut music videos (Prensky 2001). Video games, they argue, are a logical and effective training tool for this

generation.

If those who are proficient and comfortable with new technologies can be called natives, what of those people who have had to cope with learning to use them as adults? Prensky uses the label "digital immigrants", and carries the metaphor to suggest that many speak with an "accent" that some natives find difficult to understand. Examples of this accent include not using the Internet at all, or printing out emails before reading them. The implication, as discussed in Chapter Three, is that currently many educators and trainers are digital immigrants.

Above all, Prensky believes that contemporary education - especially vocational training - is not in tune with the "games generation". He argues that many younger people find education a painful experience because it does not take into account their learning preferences. He contrasts traditional approaches to education with the design of computer and video games, in which he suggests the primary objective of the game designer is to keep the user engaged (Prensky 2002b).

Digital game-based learning is built on the notion that computers are potentially very good at generating simulated vocational learning environments. As Turkle notes, the image of the computer as a mere calculator has become quaint and dated. Computing today is less about rules and calculation and more about simulation, navigation, and interaction (Turkle 1997, p. 19). We are accustomed to using computers as a medium for simulation and representation, an obvious example being the desktop metaphor used by operating systems such as Microsoft *Windows* and Macintosh *OS X*. If we use both "real" and simulated files and folders with equal acceptance, "in what sense is a screen desktop any less real than any other?" (Turkle 1997, p. 23). The ease with which we accept digital metaphors at even this fundamental level points to the potential acceptance of digital game-based learning materials. *Flood* uses a simple newsroom metaphor of telephone

contact book, wires service, and fax in-tray to provide screen tools for navigating through the hypertext scenario. These design metaphors are described in more detail in Chapter Eight.

### 5.2. Simulations and games

The biggest selling computer game in 2000 was *The Sims*, a simulation of daily life in suburbia (Frasca 2001b). An online version of the game had 82,000 subscribers in March 2003 (Manqis 2003) willing to pay US$9.99 per month to play. The distinction between simulations and games is fuzzy. Simulations have traditionally been seen as models of real systems, while games have been free to explore territory that has no real referent (Frasca 2001a, p. 25). Games arguably require elements such as a sense of fun, victory conditions, competition, and rules such that simulations are not in and of themselves games (Prensky 2001, p. 212). Yet:

> "the process of simulation is intrinsically related to the process of play … Most striking and relevant of all perhaps, are parallels between the role of play in society and the role of simulation in education" (Myers 1999, para. 25).

Computer game designer Chris Crawford argues that playing games to practise skills "is a vital educational function for any creature capable of learning" (Crawford 1982, p. 16).

Further complicating this research area is the suggestion that some forms of computer-mediated training may in fact be classified as "interactive fiction" (Juul 1999). This is a form of computer-mediated narrative in which the reader helps to determine the outcome of the story, or at least chooses from a set of story paths (Jerz, 2000). It has a literary parallel in the *Choose Your Own Adventure* series of books. Thus training tools which lead participants through pre-determined narratives may be defined as non-linear texts. This

could include current examples of online training tools such as *City Council* (Cameron, R 1999), Columbia University's *A Fire scenario* (Pavlik, Menche & CCNMTL 2001), Deakin University's *HOTcopy* (2002) and the *Flood* site created for this thesis (Cameron, D 2001). However, the narratives in these products are only the means to an end; they are designed primarily as training resources rather than works of interactive fiction.

Crawford (1982, p. 8) argues that while simulations are mainly computational or evaluative in purpose, and games are created largely for education or entertainment, the two may blend in the area of educational games. Simulation is based on accuracy and games are based on clarity – two elements that are not necessarily mutually exclusive. Also, as Prensky observes (2001, p. 214) there can be degrees of simulation – low fidelity for those based loosely on reality, and high fidelity for those modelled on reality as closely as possible. Trainers such as Prensky seek to balance the need for accuracy with the desire to provide training tools that are engaging or fun for the participants. Frasca suggests that the most appropriate means by which to understand video games is as a simulation: "a modelling of system A by a less complex system B, which retains some of A's original behavior" (Frasca 2001c). He argues that comparing games to traditional narrative forms such as literature, cinema or theatre does not give ample consideration to their behavioural nature.

Training resources such as *Flood*, and similar examples considered next in this chapter, would seem to fit this basic definition of simulations. They are models of a complex system of events and interactions, presented in a less detailed (low fidelity) form.

### 5.3. *City Council*

One recent example of Web-based journalism training material is Rich Cameron's *City Council* (Cameron, R 1999), which uses hypertext to simulate coverage of a local

government meeting. Set in the small town of Falconville, California, *City Council* requires participants to navigate through the website to review the meeting agenda and gather information about the issues raised. The participant has access to their notebook, which contains pre-scripted jottings about each agenda item, and to a Rolodex which provides navigation to key news sources. An example of a Rolodex page is shown as Figure 1. Interaction with sources is in the form of scripted text responses to a brief list of questions presented as hypertext links. Some sources will provide useful information, some will be unavailable, and some lines of questioning will provoke a negative response. Media content is limited to still images and text, and the participant is forced down limited narrative paths for each story.

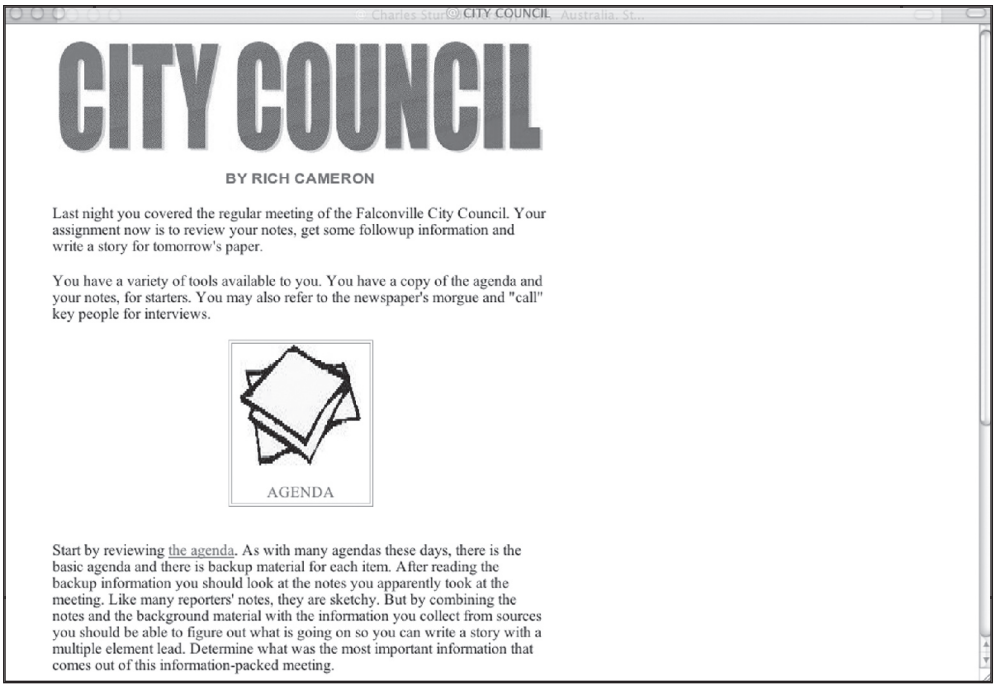


**Figure 1: *City Council* homepage starts with the meeting agenda (Cameron, R 1999).**

*City Council* was designed to supplement a beginning newswriting course, and was used as part of a final exam (Willcox 2002, p. 90). It can be accessed freely on the Web (www.rcameron.com/journalism/citycouncil/).

### 5.4. *News simulation: A fire scenario*

Another example is Columbia University's *News simulation: A fire scenario* (Pavlik, Menche & CCNMTL 2001), which uses a Web interface to lead participants through coverage of a residential fire. In this simulation, students take on the role of a newspaper reporter assigned to the police round in the fictitious midwestern town of Freeport. Fire breaks out in a high-rise residential building and the student's assignment is to cover the story for the Freeport News within a two-hour deadline.

During the course of the simulation students are exposed to information sources in the form of pre-packaged video responses to listed questions. Figure 2 reproduces the introduction page, which incorporates a video clip of a fire. *News simulation: A fire scenario* includes a range of multimedia elements such as a police radio scanner and an interactive map of the town.

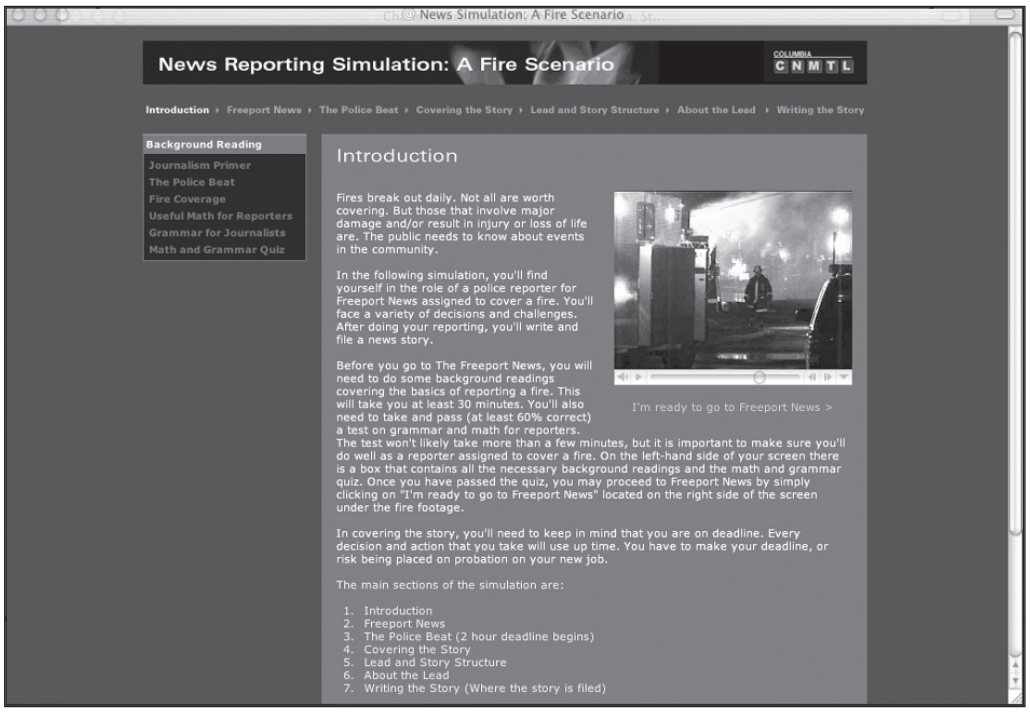


**Figure 2: Introduction page from *News simulation: A fire scenario* (Pavlik, Menche & CCNMTL 2001).**

Although fairly rich in multimedia content, the simulation still forces students down a relatively linear path with a pre-determined narrative. It is also noticeably slower to download than *City Council* because of the video and multimedia content.

*News simulation: A fire scenario* is used as an online seminar by Columbia University students. It can also be accessed for a fee (US$45) by external users (ci.columbia.edu/ci/eseminars/journalism.html).

### 5.5. *HOTcopy*

*HOTcopy* is Deakin University's multimedia journalism training simulation. Students take on the role of a journalist and are presented with aCD-ROM or online simulation of a newsroom environment. The simulation presents interactions with characters and events in the form of short online video and audio clips. Students may be required to perform a range of reporting and writing tasks at one of three levels: elementary, intermediate (one to two year's experience), and advanced (Willcox 2002, p. 93).

*HOTcopy* incorporates a range of "interventions" to recreate the day-to-day pressures of a working journalist, including interruptions by editorial staff and colleagues, complaints from sources, breaking stories, and technical problems (Deakin University 2002).

*HOTcopy* was produced with funding from Deakin University as part of a renewal process in the Faculty of Arts entitled the "enhancing e-learning in journalism" program. It was trialed with Deakin University students in 2002, and there are plans to make it more widely available.

Sample pages, as shown in Figure 3, and more information can be accessed online (www.deakin.edu.au/hotcopy/).


**Figure 3:** *HOTcopy* **(Deakin University 2002) allows guests to view samples from the simulation.**

The most recent version of Hotcopy is delivered via CD-ROM with Internet-based updates and contains 5 scenarios in which the student plays the role of journalist, and 1 in which they take on the role of chief sub-editor.

### 5.6. Games as inspiration

As noted in Chapter Three, digital game-based learning does not simply mean taking video games into a classroom, though that may be one strategy. The framework is a blending of digital technology (computers, multimedia, online) with an interactive activity that is engaging (even fun) to produce a learning outcome. That has been a goal of the *Flood* project, and forms part of the justification for labelling it a digital game-based learning tool.

Some of the basic elements of computer game design have served as inspiration for the

*Flood* project, and can also be seen in Web-based training scenarios like *City Council* (Cameron, R 1999), *News simulation: A Fire scenario* (Pavlik, Menche & CCNMTL 2001) and *HotCopy* (Deakin 2002). Games designer Chris Crawford defined four basic characteristics of a computer game in his seminal work *The art of computer game design* (1982):

- Representation: a game is a self-contained system that subjectively represents a subset of reality. By "subjective", Crawford means the game content can be fanciful, provided the participant is willing to suspend disbelief.
- Interaction: a game is a dynamic form of media. Participants can observe change as a result of their input.
- Conflict: a game has goals, and participants are confronted with obstacles.
- Safety: a game event does not place the participant in real danger.

These basic criteria shaped the *Flood* scenario's design, and can be seen to varying degrees in the current examples of online training material canvassed in this thesis. Each of the sites referred to presents a self-contained scenario based on a reality that would be recognizable to most participants. The Web by its nature requires a minimal degree of interaction in the form of hypertext links. Some elements of these sites, such as the artificial intelligence software used in *Flood* (Cameron, D 2001) may point the way towards development of even greater levels of interactivity. Participants in these scenarios have goals (such as the gathering of material to write a news story) and obstacles (for example potential sources that are unavailable for comment). Finally, these scenarios do not place the participants in direct danger from their contents – which is part of the rationale for developing simulated experiences of fires and floods.

That is not to say that *City Council*, the *Fire scenario* and *Hotcopy* were consciously

created using these gaming principles. In fact, the creators of *Hotcopy* try to distance their product from games:

> "it is important to view *Hotcopy* as a curriculum-based simulation technology and not a game. Also, it is not simply a "resource", but a teaching and learning strategy" (in Willcox 2002, p. 93).

Ironically, the *HOTcopy* Website includes comments from a teaching award judge who describes the "arcade-like experience" as one of the more innovative aspects of the Deakin approach. Clearly, like it or not, these online teaching materials share some common ground with games products. Unlike these other packages, *Flood* has been designed with this similarity clearly in mind, as a means of exploring the notion of digital game-based learning as an underlying teaching and learning strategy.

Whether designed as games or "serious" training simulations all of these resources seek to use digital media's interactivity to producing a learning outcome; they therefore fit Prensky's (2001) basic model for digital game-based learning.

### 5.7. The next step? From alternate reality gaming to immersive training

Since 2001, a new genre of online entertainment has emerged that has possible applications to education. It's described variously as immersive gaming, unfiction, alternate reality gaming or simply "beasting" (after a game known colloquially as *Beast*). A typical example of the genre is an "interactive fusion of creative writing, puzzle-solving, and team-building, with a dose of role playing thrown in" (Unfiction 2003, para. 1). As well as weaving elaborate interactive narratives, immersive games employ a wide range of everyday technologies such as Websites, email, mobile phones, and fax machines to penetrate the lives of players (McGonigal 2003a). Clues are also passed through "television advertisements, movie posters, campus billboards and newspaper classifieds … really, in any way that information can be passed" (Unfiction 2003, para. 2).

McGonigal (2003b, p. 117) describes how these games go out of their way to blur the distinction between reality and game-world, often trying to hide the fact that a game even exists. One of the earliest examples is known informally as *Beast*, which was really part of a marketing campaign for the Steven Spielberg film *Artificial Intelligence: AI* (Warner Bros 2001). The game had no official title, and was not promoted as a game at all. Obscure references in a trailer for the film sparked initial interest, leading curious people into an intricate narrative played out via dozens of Websites containing clues and puzzles. Offline clues included voice mail and even physical messages left in public places in several different US cities simultaneously. At one point, the message "this is not a game" appeared in a television commercial for the movie.

A large online community sprang up around *Beast*, as players began pooling their intelligence and resources to track clues and solve the puzzles. The designers had deliberately created increasingly harder puzzles that would eventually require a collective effort to solve, but they did not predict how successful collective play would be as a problem-solving network. When one online group called the *Cloudmakers* solved even the most difficult initial puzzles in rapid time, the designers responded by requiring even more cooperation to gather clues and solve problems (McGonigal 2003b, p. 117). The concept of collective play continues to be fostered through online sites such as the *Cloudmakers* (www.cloudmakers.org), *Unfiction* (www.unfiction.com), the *Collective Detective* (www.collectivedetective.org) and the *Alternate Reality Gaming Network* (www.argn.com). Players use these sites not only to discuss ways of identifying and playing new games, but also how to apply their problem-solving skills to real life issues.

McGonigal emphasises that the success of immersive games like *Beast* stems from their use of "everyday" networked technology, such as the Web, email and mobile phones (2003b, p. 118). Bolter and Grusin describe how art and media have long sought to create immersion by producing an "interfaceless interface", such that "the user is no longer

aware of confronting a medium, but instead stands in an immediate relationship to the contents of that medium" (2002, p. 24). Rather than attempting to create a completely simulated world as a kind of virtual reality, these games produce an alternate or enhanced reality by hiding behind common communication forms.

For example, if the *Flood* concept were to be developed as an immersive game the content might be split into many discrete Websites, each one dedicated to a particular source of information such as Police, Fire, Schools, Health Department or local government. These sites could contain information and multimedia content to describe the narratives unfolding in the scenario, but they would be framed as if they were real. Participants might receive emails from "sources", tipping them off to possible stories, or they might ring a telephone number to check their voice mail and hear messages left from their "editor".

Training resources discussed earlier in this Chapter, such as *News simulation: A Fire scenario* (Pavlik, Menche & CCNMTL 2001) and *HotCopy* (Deakin 2002), do incorporate a range of media to enhance the experience - but they are still quite explicitly framed and delivered as training simulations. Using *Beast* as a model, an "immersive training" package would not be so clearly defined.

It is possible that immersive gaming offers a glimpse at how the principles of digital game-based learning might be advanced or adapted to incorporate a range of networked and traditional media to produce a more immersive experience. For example, Carroll and Cameron (2003) found that relatively simple technology like a Website and email could be coupled with video and live performance to produce an effective form of interactive process drama. This was applied successfully as a history lesson for Dutch school children. Interaction was framed around real events, but using fictional contemporary organizations and characters to interrogate historical moments via online communication and live

performance. Like immersive games, the fictional/dramatic elements of this project were often blended seamlessly with factual/real elements, such that "role performance is seen as a mental attitude, a way of holding two worlds in mind, the world of real life (RL) and the world of the dramatic fiction simultaneously" (Carroll & Cameron 2003, p. 2).

McGonigal suggests that the game-play in immersive gaming provides models for actions and experience that can later be applied to real-world situations, as players transform "game to reality and reality to game, choosing the interface that best suits their current problem-solving needs and experiential desires" (2003b, p. 121). Thus the problem-solving, research, communication and team-work skills developed in these games transfer easily between the game-world and real-world. It is possible that a tool like *Flood* would fit easily into an immersive gaming approach to journalism training, in which students are engaged via a seamless blend of simulated and real life experience, perhaps including the message "this is not training".

### 5.8 Summary of Chapter Five

This chapter has discussed the potential role of game-based materials as journalism training tools. Some existing Web-based training simulations were outlined, and compared to Crawford's (1982) computer game design criteria. Once again, it is important to emphasise that this project takes a digital game-based learning approach, but that does not necessarily mean that it refers to the use of computer games in the classroom. While the Web-based resources discussed in this chapter may not fit stereotyped views of computer games, they fall within the parameters of Prensky's (2001) digital game-based learning framework.

The next chapter considers the likely willingness of journalism educators to adopt new technology and computer-based training resources.

## CHAPTER SIX

# TECHNOLOGY IN THE JOURNALISM CLASSROOM

Can digital game-based training materials find a place in journalism classrooms? This chapter looks at evidence that journalism educators are willing to make use of new technology in the classroom when there is a direct link to professional skills. It provides an historical context for the use of cutting edge technology as a training tool in Australian journalism classrooms, in light of the notion that journalism practice and journalism education should keep in step. This chapter includes a review of some early uses of computer-aided learning in journalism classrooms, and discussion of the inclusion of computer-assisted reporting practices into Australian journalism school curricula. It concludes with a reflection on the scope for more research into the diffusion of technological innovations in journalism education.

### 6.1. Keeping ahead of the game

In 1994, journalism educator Mark Pearson challenged his peers to "take on a role as innovators and lead our students and our profession into the new era of journalism" (Pearson 1994, p. 102). The possible alternative was for Australian journalism courses to be caught lagging behind developments in the media landscape, particularly the rise of new information delivery systems such as e-mail, the World Wide Web, and mobile phones. Journalism schools were possibly in danger of producing graduates unable to meet a demand for what Pearson labelled "versatile media communicators" (1993, p. 138).

Davenport, Fico and DeFleur (2002) observe that journalism does not match other professional education programs, like medicine and engineering, where academics

and researchers have a track record of leading the industry into new areas. Pearson's *Curricular implications of the influences of the Internet on journalism* (1999) identifies a range of potential problems associated with encouraging greater use of new media technology in the journalism classroom. Not the least of these is the need to continually review and update the curriculum as necessary to keep pace with developments (Pearson 1999, p. 50; Huesca 2000; Broderick 2001; Nicholson 2001).

Keeping pace with technology is not always the favoured option for course administrators, given the costs associated with maintaining and upgrading leading edge equipment and the speed with which technology changes (Davidson Scott 1995; Patching 1997b, p. 82; Broderick 2001). However, Pearson warns that the impact of new media technology on the practice of journalism risks "rendering many of the current approaches to the education of journalists anachronistic" (1999, p. 51). He signals a need to reconsider curricula in order to promote skills and knowledge in areas such as computer literacy, non-linear storytelling, multimedia production, legal and ethical issues in digital media, a changing industrial context, and new or altered relationships between journalists and audiences. While some technological influences on journalism "are cosmetic and might easily be addressed with Bandaid modifications to journalism programs" (Pearson 1999, p. 51), others affect the core mission of journalism.

Although changes in journalism education and practice are nothing new, especially regarding technology (Singer et al. 1996), the contemporary pressures on the media have prompted journalism educators to reconsider their own positions and teaching methods (Deuze 2001, p. 4). Davidson Scott examined attempts by journalism schools to prepare students "to brave a new world few individuals – if any – can fully comprehend" (1995, p. 30). Her survey of 250 North American journalism and mass communication educators concluded that almost half (43%) felt that new technology was being inadequately taught in their institutions, despite increased demand for technically-literate graduates

(Davidson Scott 1995, p. 36). The technology referred to included hands-on training in desktop publishing software, databases, and the Internet. Respondents indicated that more class time devoted to technology issues, and improved funding for resources and facilities may improve training in these areas. Sutherland and Stewart's later work (1999) suggested some increased activity in the use of technology on the part of courses and individual teachers, and in my experience technology is now so embedded in journalism classes that it's a part of daily teaching.

As traditional media began to come to terms with the impact of rapid technological change on their activities, many traditional journalism schools were also re-appraising their curricula. Warwick Blood's review of Quinn et al.'s *Newsgathering on the Net* (1998) notes the "dramatic change occurring in journalism and journalism education", involving a shift away from traditional news sources toward a more active form of newsmaking based on data manipulation, and supported by global computer networks (Blood 1998, p. 207).

It is nothing new for journalism schools to be criticised for losing touch with the realities of professional journalism (Herbert 1997), particularly when it comes to maintaining pace with technological change (Davidson Scott 1995; Lee & Fleming 1995; Broderick 2001). However, there is evidence to suggest that some Australian journalism educators and trainers have attempted to pursue opportunities to make use of new technology in the classroom. Pearson reflects favourably on the speed with which Australian university journalism courses moved to acquire desktop publishing software from the mid-1980s, and urges "wherever possible, journalism education should position itself at the leading edge of industry developments" (Pearson 1993, p. 138). Educators have indeed come a long way in the decade since, but technology continues to have a rapid impact on industrial and educational practices.

Also using desktop publishing as a benchmark, Stuart's portrait of journalism education in Australia finds evidence of an early adoption of technology in some courses. He names the then Darling Downs Institute of Advanced Education (DDIAE) as the first to develop a desktop publishing laboratory to produce a daily newspaper (Stuart 1997, p. 51). Stuart identifies Mitchell CAE (now Charles Sturt University) in Bathurst as the second institution to deploy a desktop publishing laboratory, in 1987. From 1980, journalism students at Mitchell had been completing publishing assignments using Panterm video display terminals that would have been the envy of many contemporary professional newsrooms (Stuart 1997, p. 49). One of these machines is currently on display in CSU's Computer Centre, as part of a collection of obsolete computer technology.

The nature of University budget planning, and the speed with which technology can change, can make it a constant battle to maintain adequate and up-to-date equipment (Patching 1997b, p. 82). The apparent reluctance of some journalism schools to upgrade equipment and practices can in part be explained by budgetary concerns (Davidson Scott 1995, p. 37). Yet both Pearson and Stuart note that Australian journalism programs have at times produced graduates with technical skills beyond what industry would consider essential at the time, such as desktop publishing (Pearson 1993, p. 138; Stuart 1997, p. 49).

Some courses have moved to ensure their students have access to the latest equipment and software. For example in 2000 Queensland University of Technology spent $250,000 upgrading equipment for its journalism course, including introduction of the Electronic News Production System (ENPS). Originally developed by the BBC, and now marketed by Associated Press, the ENPS rollout equipped QUT with technology "equal to that in most metropolitan networks and gave students valuable near-industry experience" (*Inside QUT* May 16 – 30 2000). Students use the system to produce TV news content for broadcast on community television station Briz31.

As a tutor at the then Mitchell CAE in the 1980s I experienced the shift from manual typewriters to a jerry-rigged network of four mismatched second-hand PCs in the School of Communication's radio newsroom. Stories were written using a clumsy shareware word processing package, and no work could be saved for later editing because the machines lacked any storage devices. Nonetheless, it was a significant and generally painless leap into the world of computer technology for the students, some of whom graduated into positions in newsrooms where an electric typewriter was still a luxury.

Today, Charles Sturt University's radio newsroom runs on a network of Internet-enabled PCs, using *NewsBoss* software which allows students to edit both text and digital audio material at the desktop, and present it live to air using the computer monitor as a teleprompter (Hamilton 1998). The CSU newsroom was one of the first in Australia to use the system, now adopted by major network newsrooms around the country (Gow 1998).

While many journalism educators have been willing to embrace new technology, there are those who urge caution. Wilkins warns against squeezing the basics of journalism out of the curriculum in favour of computer-aided communication skills (Wilkins 1997). Williams notes that faculty may fear the impact of computer training on core reporting skills, particularly if it devolves into wasteful e-mail or Web-surfing sessions - but she still encourages educators to ensure graduates have basic computer skills to compete in the job market (Williams 1997). Nicholson agrees that students should be comfortable with tools like the Internet, but when it comes to core writing skills "technology is just a snazzy pencil" (2001). Hill agrees "a bad journalist who can't write will stay a bad journalist, and the new breed … cannot just be a technological wizard, a 'nerd with words'" (Hill 1999, p. 30).

## 6.2. Early software solutions for the journalism classroom

Having noted the willingness of some educators to use new technology in the classroom, I will now examine some specific attempts to develop computer-based materials to support journalism training.

One early foray into computer-assisted learning by Australian journalism educators focussed on ways to better handle the sheer volume of writing exercises being produced by growing class sizes. When the University of Queensland (UQ) attempted to design a computer-aided learning package for its first year class of 300 in 1990, emphasis was placed on the potential of the software to assess students on the quality of their spelling, grammar and news values (Green 1991).

The basic aims of the project were simple: reduce the pressure on teaching staff and allow students to work at their own pace (ie, presumably with minimal supervision). The designers of the UQ package, dubbed *JournLearn*, were hoping to make use of the computer's power to collate data, track student progress (including marks and final grades), and present students with options for remedial action (Green 1991).

The nature of this type of software package is to concentrate on assessing the finished product as a piece of journalistic writing, without reference to the students' experience of gathering the information. Thus *JournLearn* could use software to check spelling and grammar (albeit often using American English), and look for keywords nominated by the instructor as indicators of story structure (Green 1990); but it could not really interpret the work as an act of journalism. Green acknowledges that it is not always possible to foresee every valid keyword choice (Green 1990, p. 185). Computer-aided packages in general are just part of the educational process, and do not replace lecturers and tutors (Green 1991, p. 90).

*JournLearn* appears to have retained an inherently traditional approach to presenting students with the information required to complete a newswriting task. Despite an awareness that the computer "was capable of delivering so much more than just a simple emulation of hard-copy exercises" (Green 1991, p. 89), *JournLearn* ultimately still required students to write stories based on information presented by staff in the form of a "fact sheet". It is an approach criticised in Michael Stevens' assessment of *JournLearn* as reducing journalism to "a chore which could be performed by a PC-literate monkey" (Stevens 1992, p. 96), and which would tend to produce journalists who merely respond to the contents of press releases.

Stevens had missed the point that educators could in fact make use of source material other than media releases (Green in Stevens 1992. p. 99), but he does correctly identify the limited interaction with the subject matter afforded by this style of computer-aided learning software. By providing students with a fact sheet of information, *JournLearn* did not inherently require students to unravel their own narrative as they teased out the facts of a story from multiple sources of information. In this sense it was simply emulating hard-copy exercises.

The *Flood* Web-based scenario is an attempt to incorporate newsgathering practice into a newswriting exercise, thus adding training value to the task. Students are required to identify and pursue narrative threads and engage with information sources as part of the process of writing news stories. Chapter Eight details how the scenario functions. At this stage the *Flood* material does not include any automated assessment or student-tracking capabilities, and is designed as an aid to teaching. However, clearly part of the appeal to educators of computer-mediated tools like *JournLearn* and *Flood* is their potential to cater for a large number of students with minimal supervision. A key difference is that *Flood* is designed for distribution online using freely available Web-browsing software, while *JournLearn* was a proprietary system installed and accessible only in a campus

laboratory setting.

*JournLearn* was an attempt to create an integrated self-assessment package to allow students to work with minimal supervision and at their own pace. *Flood* is a prototype with similar aims, but also with the goal of using a range of media to engage students with several different possible narratives that must be identified and teased out in order to produce news stories. Other attempts at computer-aided journalism training have concentrated on providing students with a more engaging and interactive relationship with learning materials. For example, the development of the *HyperCard* system for early Macintosh computers gave some educators a taste of the power of multimedia and hypermedia that would become even more prevalent today in the World Wide Web.

*HyperCard* was a simple authoring software tool for Macintosh computers that allowed developers to combine text and graphics to produce basic interactive screen displays. Greene (1991) has outlined the dramatic impact the use of *HyperCard* materials had on a news editing and design subject taught at San Jose State University in the early 1990s. Access to a Macintosh lab loaded with purpose-designed multimedia material engaged the students, and intensified learning "by propelling a student down a personalised, self-directed, but pre-determined path to curricular success" (Greene 1991, p. 87). The *Flood* package is a similar attempt to enhance the learning experience through multimedia and interactivity. The development of the World Wide Web as a networked delivery-option for multimedia content has created a more universal platform than system-specific methods such as *HyperCard*. Like Greene's classroom experiments, *Flood* still primarily relies on pre-determined paths using hypertext links. However, the use of chatterbot technology is an attempt to break away from the narrative confines of that approach.

Greene also points out a benefit to staff, with the computer-aided learning materials freeing up the instructors to allow them time to wander the classroom looking for individual

problems that need attention (Greene 1991, p. 84). Given the relatively large amount of face-to-face teaching experienced by Australian journalism academics (Patching 1997a, p. 42), the freedom to spend more time refining individual student's skills could indeed by seen as a welcome advantage of using computer-based learning materials.

### 6.3. Adding computer-assisted reporting to the journalism curriculum

As well as trying to keep pace with changing hardware and software, journalism educators have also had to keep abreast of the trends in professional practice that have accompanied the availability of new technology in newsrooms. One example is the practice of computer-assisted reporting (CAR), which was identified as a significant new element in US journalism during the early 1990s (Tapsall & Granato 1997). At a basic level CAR involves relatively easy computer techniques such as using e-mail to contact sources, and searching the Internet for information. At a more advanced level, CAR relies on high order computer research skills or deep analysis of specialist databases to develop original stories (Quinn, S 1997b). Davenport, Fico and DeFleur's quantitative research into the adoption of CAR training found almost all of the responding 209 U.S. education programs include basic CAR training, although most lag behind newsrooms in their use of CD-ROM archives and public records (2002).

Quinn (1997b, p. 139) notes that while the increasing acceptance of CAR as a reporting tool in the US was coupled with its inclusion in the curricula of most journalism educational institutions, "the level of understanding of CAR in Australia is high among educators but low among practitioners". Tapsall found that the application of CAR in the Australian context was generally at a lower level than the US, and that in fact the American techniques may not be fully adaptable to Australian newsgathering for reasons such as differing political and legal frameworks (Tapsall 1997). Recent survey work by Lawson (2002) also finds that CAR has not significantly penetrated Australian newsrooms beyond

superficial use of e-mail and Web-based research, and suggests that working conditions offering journalists little time and limited resources may be partly to blame.

Quinn's (1997a) survey of Australian journalism educators in the late 1990s concluded that most were aware of the concept of computer-assisted reporting, and that two thirds of the 15 respondents were teaching students basic CAR methods such as e-mail and data collection. Few were teaching the deeper CAR research methods that had emerged in the US, but the addition of CAR techniques to Australian journalism curricula offers further evidence that educators are often willing to embrace new technologies and practices ahead of industry demand.

As well as noting some resistance among working journalists to Internet use, Quinn also raises doubts about the willingness of many journalism students to embrace technology such as the Internet and e-mail (Quinn, S 1997b, p. 138). An earlier experiment with computer-mediated communication (CMC) in a media law class found that some students hoped never to be subjected to the new technology again (Smith, WE 1994). As discussed in Chapter Eight, a survey was conducted in 2002 of a class of first-year students using the *Flood* scenario. Of the 45 respondents, 75.5% indicated they felt comfortable working with computers, 17.8% indicated a level of discomfort, while 6.7% were uncertain. Nonetheless, an overwhelming majority (96%) indicated they had enjoyed using the Web-based materials in class. Singer et al. (1996) identified diverse attitudes towards new media technology among journalism and mass communication faculty and students, and concluded that some will be slower to accept and use new technology. Witmer (1998) believes the knowledge base of most students sits somewhere between the extremes of "techno-whiz" and novice, such that "the educator must unify a wide range of student vocabularies, perceptions, understandings, and expectations" regarding computer-based learning.

Pearson's experiments with e-mail as a delivery method for a student news service produced the unexpected positive side-effect of encouraging students to make greater use of electronic messaging as a newsgathering technique (Pearson 1993, p. 134). This suggests that students (like professional journalists) will make use of new technology when its value is clearly understood or experienced in a practical context. Hester (1999) also found a largely positive response to the use of Web-based interactive testing in a mass communication theory subject.

While Quinn's observations of student resistance to the Internet may have been true enough in 1997, it is my belief that access to the World Wide Web and e-mail are a more fundamental part of a tertiary student's life today. Institutions routinely provide students with Internet access, and many administrative transactions are now conducted online. For example, from January 2002 Charles Sturt University no longer sends its students hard-copy notices, and instead requires them to regularly check a Web-based "eBox" for all official correspondence (Smith, L 2001). As society moves more deeply into an age of electronic communication and online data sources, journalists and students will have no alternative but to use the Internet (Gunaratne & Lee 1996, p. 25).

There is clearly scope for more research in this area, particularly as regards the diffusion of technological innovations in both the journalism industry and journalism education. Rogers (1995) asserts that innovations stand a better chance of adoption when they can be experimented with, and the results are observable. In *Diffusion of innovations* (1995), he posits that there are five basic characteristics of innovations that affect their rate of adoption by individuals:

1. *Relative advantage* – the degree to which an innovation is perceived as better than the idea it supersedes.
2. *Compatibility* – the degree to which an innovation is perceived as consistent

with existing values, past experiences, and the needs of adopters.

3. *Complexity* – the degree to which an innovation is perceived as difficult to understand and use.
4. *Trialability* – the degree to which an innovation may be experimented with.
5. *Observability* – the degree to which the results of an innovation are observable to others.

Sutherland and Stewart (1999) used diffusion studies to examine the adoption of the World Wide Web by journalism courses, finding that few had made significant use of its education or marketing potential. Sutherland and Stewart (2002) compared the diffusion of CAR techniques into newsrooms and journalism programs in the U.S., finding that although industry still leads the way in the adoption of technology, the gap is closing. In considering the adoption of digital game-based learning materials it is worth noting that Rogers cites the *Nintendo* home video game system as possibly "the fastest-diffusing consumer electronics product of all time, finding a place in one third of U.S. households within 7 years of its release in 1986 (1995, p. 246).

Gladwell (2000) develops the notion of diffusion further to examine what factors produce a critical mass for a social phenomenon, craze, new idea or invention. He describes the moment that an idea "takes off" and rapidly becomes more widely accepted as the Tipping Point. Gladwell notes that one of biggest barriers to diffusion is a communication gap between the early adopters of an innovation and the majority of users who eventually take it up:

> " the attitude of the Early Adopters and the attitude of the Early majority are fundamentally incompatible. Innovations don't just slide effortlessly from one group to the next. There is a chasm between them" (2000, p. 198).

Therefore, even a very good idea or innovation may fail if it is not quickly understood by a majority of people.

### 6.4. Summary of Chapter Six

Digital game-based training materials can find a place in the toolkit of Australian journalism educators and trainers.

This chapter provides an historical overview of the use of new technology and technology-based practices in Australian journalism classrooms. The main considerations are that:

- journalism schools are often measured against current industry practices. There is evidence that educators have at times been a step ahead of newsrooms in the adoption of new technology and techniques.
- Despite moves by some educators to adopt innovative approaches to teaching with technology, there are those who caution against replacing core reporting skills with computer skills in the curriculum.
- Journalism educators have already shown a willingness to explore the potential of technology to re-present teaching materials that are more student-oriented and engaging.
- Generic computer skills are generally considered important by journalism educators, though working journalists in Australia do not yet use deep-level computer-assisted reporting techniques extensively.
- Several factors can influence the degree to which technological innovations are diffused within an industry or educational curriculum: relative advantage, compatibility, complexity, trialability and observability. Even the most useful innovations may fail to achieve widespread acceptance if a tipping point is not reached.

The next chapter provides a detailed description of the design and production of the *Flood* Web-based training scenario.

## CHAPTER SEVEN

# PRODUCTION NARRATIVE

The previous three chapters have provided a descriptive analysis of the use of simulations in journalism education, the emergence of a digital game-based learning and teaching framework, and historical precedents for the application of technology in Australian journalism classrooms.

This chapter now moves into the "production narrative", which outlines the background for the development of the prototype *Flood* training package, and the collation of raw materials. Secondly, the production experience is revealed through a description of the construction process, including a discussion on how the character-based sources in the scenario were developed. Finally, this chapter outlines the implementation of an artificial intelligence agent to allow users to question a character in the training package.

### 7.1. Background to production

In early August 1998 the town of Bathurst in central western New South Wales was affected by serious flooding of the Macquarie River. Several major roads were cut off by water, including the Great Western Highway, and dozens of homes were inundated.
At the time of the 1998 flood I was working as the Newsroom Supervisor/Demonstrator for Charles Sturt University in Bathurst.

CSU's School of Communication operates a radio newsroom in conjunction with the community radio station 2MCE-FM. The radio station and newsroom are located on the CSU campus. Students enrolled in the Bachelor of Arts (Communication – Journalism) undertake training and practical experience in the newsroom, producing and presenting

regular news and current affairs programs for broadcast on 2MCE-FM.

On the afternoon of August 7, 1998 I was contacted by an officer of the State Emergency Service (SES) and told that major flooding was imminent in the Bathurst area. Local media were being contacted as part the local emergency plan. This was not the first time I had been involved in providing radio coverage of flooding in Bathurst, having experienced similar events in 1988 and 1992.

The flooding in 1998 had become a major event late on a Friday afternoon, and there were no students rostered to work in the newsroom until the following Monday. Nonetheless, I was able to contact a handful of second and third year students willing to work on special flood coverage for 2MCE over the weekend if required.

Having experienced flooding events previously, I was aware that it would represent an excellent example of a "running story", and that the students involved would gain valuable experience. During the 1992 floods CSU journalism students had provided considerable coverage on 2MCE, and several had also filed stories for metropolitan radio stations.

In addition to supervising the radio coverage, I decided to experiment with an added dimension – the provision of an online news service. A basic Website was prepared detailing road closures and flood-related information from emergency services and Government departments. The web address was publicised on 2MCE, but no attempt was made to monitor use of the site. The small project was mainly a "proof of concept" exercise, an experiment in the creation of an online version of materials being generated in the radio newsroom. Figure 4 shows a screen from the flood news site, which can also be viewed as an archived version at www.csu.edu.au/2MCE/98flood/.

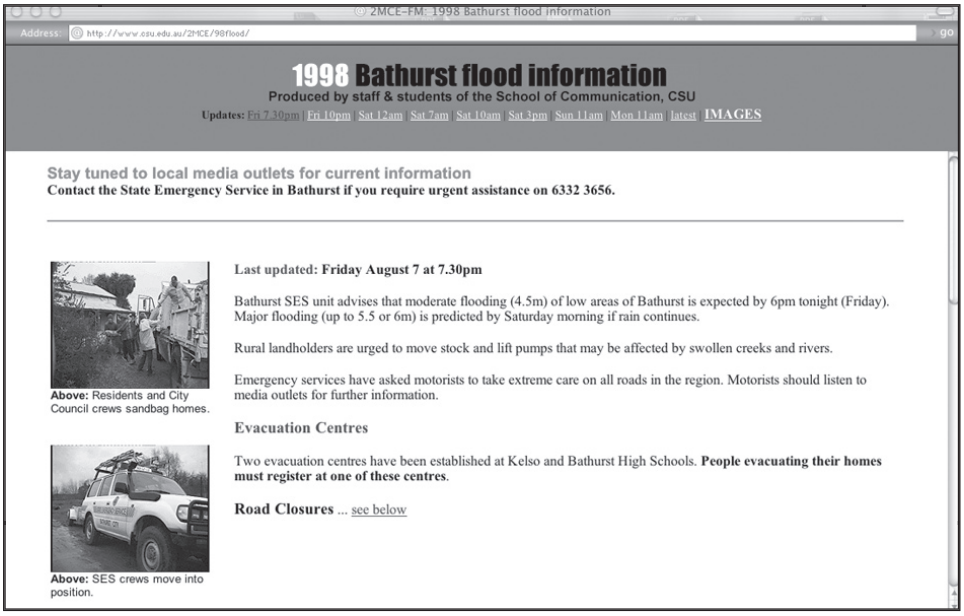


**Figure 4: Sample page from the 1998 2MCE-FM flood news Website.**

As a result of working on the radio and online coverage, I gathered a large amount of raw materials from a number of sources. This included the regular updates of road closures issued by Police, and Australian Associated Press (AAP) wire stories on the floods affecting Bathurst and other areas of NSW. There were also regular flood bulletins issued by the SES listing river heights and significant developments, weather forecasts from the Bureau of Meteorology, and media releases from various organizations and Government departments.

In addition to the paper-based resources, video footage was shot around Bathurst, illustrating various aspects of the flood over the course of several days. The footage included a trip in an SES floodboat up and down the Macquarie River as the crew investigated reports of a group of children seen riding their bicycles in the water.

After the floods this material was filed away. Having seen the valuable experience gained by students working on the coverage, I planned to develop a newswriting exercise in the future that made use of the primary source material. In 2001 I revisited this material with

the intention of producing a newsgathering simulation. I wanted to make use of the Web as a delivery method, utilising some of the multimedia elements that were available such as images and video. The site would be an attempt to marry some of the techniques and approaches of interactive game design with the aims of journalism education to produce learning materials that were engaging for the students.

The goal was to produce a fictional scenario based on experiences of the Bathurst floods. Students could take on the role of journalists working for a fictitious media outlet in the region. The project was spurred on by the need to develop materials suitable for use with an online-delivered postgraduate journalism subject.

### 7.2. Collation of raw material

The raw material was collated and reviewed to reacquaint myself with the narrative that had developed during the real floods of 1998. It was decided that the simulation would be built around interaction with "characters". Attention was paid to identifying the main sources of information, their roles in the real event, and the amount and type of information they were likely to impart to journalists seeking to cover a real flood event.

The video footage was also reviewed and logged with the intention of preparing clips to be made available to students either as background material so they could see a real flood in progress, or as material to be used in the creation of TV stories. It was considered at this stage that clips could be provided for students to edit and add voice-overs to, using readily available desktop video editing packages such as *iMovie* or *Final Cut Pro*. Broadcast Journalism students at CSU are taught video editing using this software in their first year subject COM108 Video Production. The video footage could also be used as a source of still images for the Website, as the video editing software allows single frames to be exported in a variety of digital image formats. In the current version of the *Flood* package,

provided on the accompanying CD-ROM, some of this video footage is presented as a library of short clips illustrating the scenario.

The original Website produced during the 1998 floods was also still available as a resource. Although the material contained on the site was mostly also available from hard-copy sources, it provided a useful reminder of the timeline of events. It also contained a gallery of images drawn from the video footage at the time, which would prove useful when designing the Website.

### 7.3. The construction process

As noted above, a decision had been made to create a fictional setting for the flood. The appropriately named town of Lagoon was conceived, although its geographical situation is based heavily on that of Bathurst. In fact, there is a small village outside Bathurst called Lagoon, which provided the inspiration for the name. Thankfully this didn't seem to confuse the students who later tested the Website, although one obviously familiar with the local area did comment on it. It was decided to include reference to other fictional towns and localities in the region, to add depth to the scenario and provide more sources of information (some relevant, some not). It will remain to be seen whether or not this has produced an unnecessary complexity.

A map of the region was designed, as was a map of the main area of Lagoon. Place and street names were conceived and added to the map. This would prove a useful design approach, as it was handy to have a sense of the fictional geography when scenarios within the simulation were being conceived. It lent a geographical consistency to the simulation. It was also decided at this stage to try and avoid any specific geo-political references in the scenario, even though it was based on events in New South Wales. It was felt that a generic approach might give the scenario greater value, given that it was being

designed for the borderless realm of cyberspace.

A rough storyboard was produced to outline the main features of the Website. It was decided to build it around a set of standard navigation buttons providing access to the features to be used by the students as they worked their way through the site. The raw material provided the inspiration for the navigation features - it was decided that background material would be provided mainly in the form of faxed media releases and wire service stories.

This background material was then produced. I used the software application *Dreamweaver 4* by Macromedia to design and encode the Web pages. Adobe's *PhotoShop 5.5* was used to produce graphic elements. The intention was to provide students with information that might help them write stories, as well as clues to possible sources of more detailed information and story angles. It was also intended that some of the information would be out of date, contradictory, or generally irrelevant to a local audience. It was felt this would be a reasonable simulation of what happens in a busy newsroom during ongoing coverage of an emergency situation.

The main method of pursuing story angles was to be via reference to the journalists' telephone contact book. Students would have to identify the relevant organizations to contact, and pursue them via the telephone contact list. With this in mind, the storyboard was expanded further to identify those organizations most likely to be contacted in the pursuit of stories related to a flood. Some of the organizations were obvious. These were emergency services like the SES, Police, Fire Brigade, and Ambulance. However, as the intention was to allow students to draw out a range of narratives, other elements were added. So for instance there would be schools where evacuees were receiving help, local government facilities, and rescue helicopter services.

At this time a number of digital photos were taken of buildings (mostly on the CSU campus, some in the town of Bathurst). These were to be used to illustrate some of the fictional locations in the scenario – a largely aesthetic decision, but it was felt at the time it would help create an air of realism to the story. Although I was aware that there was a potential to confuse some students by using buildings they may be familiar with, it was felt that the context would allow them to suspend their disbelief. In some cases, the images were suitably obscure or taken from unusual angles so that the buildings were not easily identified anyway.

The design and production process was completed in my spare time over a period of about six weeks in total. Material costs were minimal, as I had access to the necessary equipment and software.

### 7.4. Interaction with "characters"

Once the basic locations were created, a series of mini scenarios was developed to populate the artificial town with "characters" that would act as sources of information. The simulation uses hypertext to lead students through these mini narratives. By going to the telephone contact book, or media releases, the student can locate a source of information and "contact" them by clicking on their phone number that appears as a hyperlink on the page. This takes them to another page for that location. These pages might contain a photo of the location. Text on the page would then inform the student of possible next steps. In some cases this might be a simple statement that the phone is not answered. In other cases the call might be answered, but no opportunity is presented to interview the person who answers.

In most cases though, the page contains a number of hypertext links which give the student the option of pursuing a certain line of pre-determined questioning, or in some

cases undertaking some other actions (such as reading a media release). Students can follow these hypertext links in an effort to find all of the information that a particular character has to reveal. Some of the information would be relevant; other characters ultimately prove to be largely a waste of time in terms of the news agenda.

Attention was paid towards trying to provide a mixture of responses in an effort to give some variety to the characters being encountered, and to better reflect the "real world". Just as in reality, some characters would prove more useful than others. Some will be helpful, some will not. As with the media releases and other background material, some of these mini scenarios were deliberately devised as "red herrings" or time wasters. While the students had no choice but to pursue the lines of questioning written for the scenarios, they were still required to assess what information was relevant or newsworthy, and which story angles were worth chasing.

Finally, navigational hypertext links were provided to the maps of the region and Lagoon and also to a gallery of images. Although taken from the 1998 flood Website, these were repackaged as if they represented events taking place in Lagoon. A page backgrounding Lagoon and surrounding townships was also prepared to help draw students into the simulation, and give them more of an understanding of the lay of the land.

### 7.5. Artificial Linguistic Internet Computer Entity (*ALICE*)

The bulk of the project was built on detailed but ultimately pre-determined hypertext narratives. As is the case with other examples of Web-based news simulations, such as *City Council* (Cameron, R 1999) and *A Fire Scenario* (Pavlik, Menche & CCNMTL 2001) students are effectively channelled down investigative/interviewing paths designed for them by the authors. They have no input into the questions asked of the characters they encounter during the course of the simulation, a flaw which may in fact work against

teaching participants a basic journalism skill – interviewing.

I decided to experiment with a more interactive element that might allow students to pursue their own line of questioning. An online search was conducted to find suitable artificial intelligence (AI) software that might be adapted for inclusion in the project. In particular, I was searching for software known generally as a "chatterbot". These software programs are designed to operate in synchronous communication environments such as online chat rooms, responding to text input from human users with replies that give the impression that a real person is answering.

The software uses a series of rules to filter the input, and return a (hopefully) suitable reply from a database of pre-written options. For example, the chatterbot may look for certain keywords and offer a pre-determined response when one or more is detected in the human input. There is an element of "trickery or deception" (Wallace 2002, para. 4) inherent in the design of chatterbot software, but it does provide a potentially useful and powerful tool for online simulations based on human interaction with virtual characters.

The impetus for designing chatterbot software stems in part from the challenge posed by the so-called Turing Test for artificial intelligence. In the 1950s mathematician Alan Turing proposed that eventually a computer would be able to fool a questioner into thinking it was human. The most famous contemporary Turing-style test is the annual Loebner Contest (www.loebner.net/Prizef/loebner-prize.html), which began in 1991, which takes the form of a real-time screen conversation between human judges and software contestants.

Chatterbots have their roots in the *ELIZA* program developed by Joseph Weizenbaum in the late 1960s. The *ELIZA* software pretended to be a psychotherapist, but was in fact simply matching patterns in text input and attempting to provide suitable responses

from a database. It often used the strategy of answering questions with another question, which mimics the basic principle of some psychotherapeutic techniques, and it proved fascinating for users. Weizenbaum was in fact disturbed by the ease with which people would confide in the software, and invest it with an authority (Turkle 1997).

Ryan (1997, p. 694) also notes the game-playing nature of such software where "to the user willing to play a game of make-believe with the computer ELIZA was the perfect prop". This hints at its potential application to game or dramatic environments. Another example of a successful chatterbot is Michael Mauldin's *Julia*. This software was developed to inhabit so called Multi-User Domains (MUDs), online virtual worlds where users interact via text input or in more recent years via graphical representations of their characters known as avatars. *Julia* can manipulate virtual objects in the MUD environment, and was given specialist knowledge of selected topics to assist her entry into the Loebner contest (Murray 1997).

In the *Flood* project, it was hoped that the role of the Lagoon SES Controller – modelled on a key source of information in the real Bathurst flood emergency, and a likely choice of person to interview in the simulation – could be played by AI software rather than relying on the pre-scripted hypertext questions. It was hoped that a suitable chatterbot could be found which would allow students to enter natural language questions via a text box, and receive replies that would provide them with a reasonable simulation of an interview situation.

The software chosen was *ALICE* (www.alicebot.org), designed by Dr Richard S Wallace in 1995 and subsequently refined by Wallace and others (Bush 2001). Originally known informally as "Alice" in reference to the name of the computer that it was hosted on, the retrospective title "Artificial Linguistic Internet Computer Entity" was chosen to justify the acronym *ALICE* (Wallace 2002).

*ALICE* was chosen for this project for several reasons. Firstly, it was available free of charge via the Internet to anyone wishing to develop his or her own chatterbot. There was also a version available that would run on the Macintosh computer available for this project. *ALICE* was designed to work with a Web interface, which meant it would slot easily into the rest of the simulation. *ALICE* also includes logging features, which track client input and chatterbot responses, and this was considered a useful feature for analysing how students attempted to interrogate the character. These interactions can be monitored in real time and, although it was never attempted, the designer can take over the conversation and respond in place of the chatterbot.

Most importantly, after some initial experimentation, I felt that *ALICE* had the necessary flexibility to be adapted to the specific task desired for this project. *ALICE* is designed to allow programmers to use tailor-made responses to client input. In effect, this allows designers to shape the "personality" of the chatterbot.

Artificial Intelligence Markup Language (AIML) is used to program the chatterbot's responses. AIML provides a basic grammar for producing pattern-based stimulus-response content. In other words, it enables the chatterbot designer to create simple text files that define keywords or patterns of words and appropriate responses.

For example:

```
<category>
<pattern>WHAT TIME IS IT</pattern>
<template>I'm sorry, I left my watch at home</template>
</category>
```

In this example, the <category> tag tells the software that a new input pattern and response are about to be defined. The <pattern> tag then indicates that what follows is the

stimulus part of the category – the input. This is not case sensitive, and punctuation marks are ignored. The <template> tag indicates that what follows is the response that should be given – the output.

Thus, in this example, if a student were to type in the question "What time is it?", the chatterbot would respond with "I'm sorry, I left my watch at home". The AIML specification allows for some complex processes that can reduce input phrases down to key words until a pattern is matched. In the event that no specific category can be found to match the input, *ALICE* can be programmed to respond with a variety of default responses. With careful planning, even these responses can seem realistic.

Figure 5 shows sample screen output from the *ALICE* chatterbot server in response to input from a student (shown as localhost). The student asks the question "when will the flood end"? The chatterbot has no specific response to that question, and so attempts to break it down into smaller parts that it may be able to interpret. It identifies a default response for a question beginning with "when will", and so it returns the answer "Soon, I think".

```
Alicebot.Net 4.0 Beta server is running…
Tim is thinking with 23386 categories.
Try http://localhost:2001 for server
Your Alicebot IP is 137.166.33.163:2001
Type 'exit' to shutdown server
localhost>When will the flood end?
1. WHEN WILL * : * : * star = THE FLOOD END [bots/Tim/std-
brain.aiml]
Response 224ms (224.0) 1
Tim> Soon, I think.
localhost>
```

**Figure 5: Server-view of *ALICE* chatterbot response to the question: "when will the flood end"?**

While this isn't a particularly enlightening response, it does make sense in the context of the question. More importantly perhaps, it does not break the illusion that the character is responding to the student's question. Most chatterbots will rely on generic default comments that can be drawn upon when all else fails. Another common approach is to change the topic, or refer to a previous topic of discussion (Murray 1997). The main principle of this "graceful degradation" is to avoid halting the conversation or breaking the user's willing suspension of disbelief (Ryan 1997, p. 694).

Figure 6 shows a more complex response to student input for which the chatterbot does not have a pre-defined answer. The student asks the question "what shops are damaged"? Again, lacking a direct response to that input the chatterbot software attempts to find a suitable alternative. It identifies that a question has been asked ("what") but is unable to make sense of the phrase "shops are damaged". In an attempt to maintain the illusion of a real conversation it replies with a random default response, and then resorts to the trick of asking the user a question.

```
localhost>What shops are damaged?
1. WHAT * : * : * star = SHOPS ARE DAMAGED [bots/Tim/std-65percent.aiml]
2. FIND * : * : * star = SHOPS ARE DAMAGED [bots/Tim/std-pickup.aiml]
3. : * : * star = SHOPS ARE DAMAGED [bots/Tim/std-pickup.aiml]
4. CATCHALL * : * : * star = SHOPS ARE DAMAGED [bots/Tim/std-
pickup.aiml]
5. SAY CONFUSION STATEMENT : * : * star = [bots/Tim/std-pickup.aiml]
5. ASK USER A QUESTION  : * : * star = [bots/Tim/std-profile.aiml]
6. ASK QUESTION3 : * : * star = [bots/Tim/std-profile.aiml]
Response 268ms (254.2) 4
Tim> Check back later and see if I learn the answer to that one. <br />
I'm just looking through our latest flood bulletin. <br /> Where did you
say you were caling from?
localhost>
```

**Figure 6: Server-view of *ALICE* chatterbot response to the question: "what shops are damaged"?**

This is an attempt to cover the chatterbot's indirect response to the initial question, and hopefully maintain the illusion of dialogue. As many politicians well know, changing the subject is a good way to duck a question you can't answer. It is a good example of

the *ALICE* software's primary purpose – to fool people into thinking they are talking to a human. However these types of responses may also contribute to the realism of the training scenario by distracting users from the underlying technology. Murray notes that the sense of presence generated by such artificial characters "does not come from giving factually correct information but from demonstrating dramatically appropriate behavior" (Murray 1997, p. 218).

One goal for this project was to create a "character" that students could interview, and that hopefully would return responses that made sense. Interestingly even nonsensical answers might have a benefit, as they can create an air of eccentricity "that makes the characters more memorable and lovable" (Ryan 1997, p. 694), or at least seem to have a personality of their own.

It was also considered that this might be a useful tool for honing a student's interviewing skills. As the AIML language could allow for certain questions to return specific answers, students could be rewarded or punished for asking good or bad questions. For instance, a general "what's been happening in the floods" question might receive an equally vague or general reply.

Figure 7 shows that the question "what roads are open" returns detailed and specific information in the *Flood* scenario.

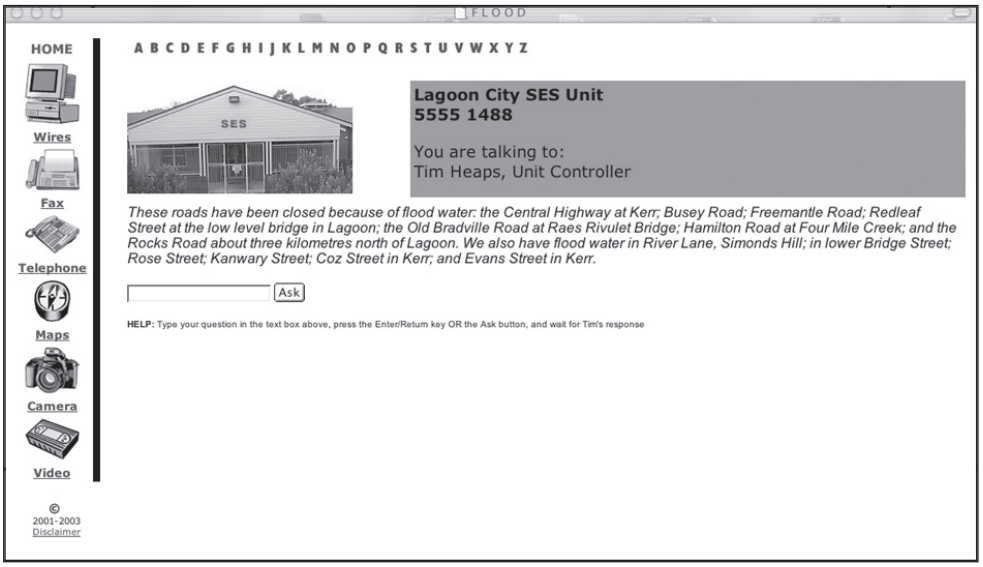


**Figure 7: Webpage view of *ALICE* chatterbot response to the question: "what roads are open"?**

Also, a small but added benefit of the *ALICE* approach is that part of the chatterbot's default "brain" is programmed to handle some of the more obvious swear words and explicit requests that could possibly be anticipated from users keen to push the boundaries of the software (the same drive that urges some people to judge the quality of a new dictionary by the number of swear words it defines). For this project the default responses to such input were altered to include friendly reminders about the University's policies regarding proper use of its computing facilities.

While the concept of AIML was fairly quickly grasped, in practice programming *ALICE* proved a lengthy task. Much of the initial development time was taken up with modifying the chatterbot's standard responses in order to give them the flavour of the SES character. *ALICE* was originally designed to participate in the Loebner competition, which involves an attempt to design AI software that can fool human judges. To that end, some of *ALICE*'s default responses were tailored specifically towards that competition. There is also a certain computer culture bias in some of the default responses, which simply would not work in the flood scenario. Also, different people had authored some of the

default response files, so there was a lack of consistency apparent in some of the answers provided by the chatterbot.

Once some of these responses had been changed to produce a more consistent character, an effort was made to provide responses that would prove useful to a student seeking information about the Lagoon flood. In the early stages, this included information about road closures. The process of adding information to the *ALICE* brain can be slow and complex at first, as it requires some thought as to what likely input may be, and how that might be reduced to its key components. However, it is very rewarding when you test the "brain" you have created and get some worthwhile responses to your questions. The potential as a journalism training tool was apparent even at this most clumsy and earliest of stages, and the ability to log input means the response files can be fine-tuned over time based on user activity.

### 7.6. Delivery of the simulation

After testing on the design machine, the Website was uploaded to a server. I initially decided to use a private Internet Service Provider (ISP) rather than host the site on the CSU Web server. The main reason was that it was not considered wise to conduct an experiment using the University's main public Web server. Also, the private ISP provided features that would enable me to track accesses to the site if such information were desired. More recently a copy of the site has been uploaded to the CSU Web server (www.csu.edu.au/newmedia/flood/) as a back-up to the externally hosted version.

However, the *ALICE* software was initially placed on a Charles Sturt University machine. A Macintosh G4 computer with direct Internet access was available for the project. This version of *ALICE* runs in the form of a mini Web server, and this setup proved to be the most convenient for early testing. Since the chatterbot was first developed for this project,

the *ALICE* software has been upgraded with a user-friendlier Web-based interface for creating, developing and publishing AI agents.

A free hosting service (www.pandorabots.com) provides tools for creating a chatterbot and fine-tuning its responses to user input. There are also additional features being developed that will incorporate e-commerce tools, animated characters and text-to-speech translation (Wallace 2003, p. 6). The most recent version of *Flood* - provided on the CD-ROM component of this thesis - makes use of this free online service, as it is easier to administer and maintain than the Macintosh server. Once a chatterbot is created and published on the hosting site, it can be incorporated into the *Flood* project using customised HTML code. This service also raises the possibility that several chatterbots could be built into the *Flood* package, replacing the pre-determined character interactions.

### 7.7. Summary of Chapter Seven

This chapter has followed the research method of a "production narrative", taking Denzin's notion of the researcher-as-storyteller (1998, p. 323) as its guide. It has provided the background to coverage of the real flood that affected Bathurst in 1998, and described the gathering of raw materials for use in the development of a journalism training scenario.

An innovative development described in this chapter is the use of artificial intelligence software in the form of a chatterbot. This has the potential to create a much more realistic interaction between the user and the characters providing information in the scenario. It is one way in which students may be able to develop their interviewing skills while working with Web-based training simulations.

The next chapter provides a description of the *Flood* training package in operation, and considers feedback from student trials of the materials.

## CHAPTER EIGHT

# USING THE FLOOD SCENARIO

This chapter begins with a brief description of the scenario, to give a sense of its features and layout, and then describes a typical search for information about a story. The chapter then outlines three trials conducted with the project in (1) an internal undergraduate newswriting subject in 2001; (2) an internal undergraduate newswriting subject in 2002; and (3) a postgraduate distance education subject in 2002.

## 8.1. A brief description of the scenario

The scenario starts with a home screen (www.rocketonline.com.au/flood/) that provides instructions on how to navigate through the site, as shown in Figure 8.

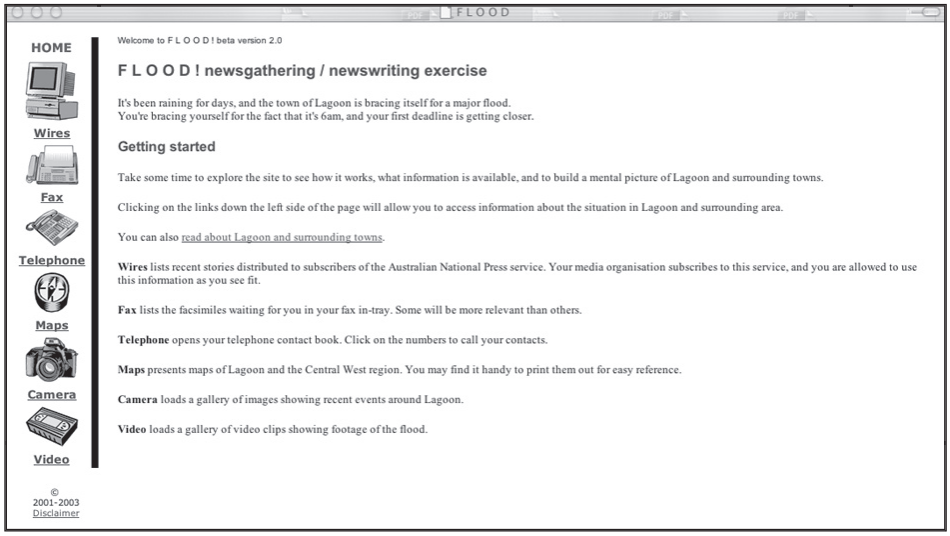


**Figure 8: The *Flood* home page (www.rocketonline.com.au/flood/ or www.csu.edu.au/newmedia/flood/).**

There is also more information about the graphical navigation links that remain static on the left side of the screen throughout the scenario. These links provide the following functions:

- **Home** returns the user to the opening screen.
- **Wires** lists recent stories distributed to subscribers of the Australian National Press service.
- **Fax** lists the facsimiles waiting in the fax in-tray.
- **Telephone** opens the telephone contact book.
- **Maps** presents maps of Lagoon and the Central West region. Users are encouraged to print them out for easy reference.
- **Camera** loads a gallery of images (taken from video footage of the 1998 Bathurst flood) showing recent events around Lagoon.
- **Video** links to a library of short video clips (from the 1998 Bathurst flood) illustrating a search of the river for missing children.

Users are also urged to take some time to familiarise themselves with what's available, and to start to build a mental picture of what is happening in Lagoon. There is a hypertext link to more information about the towns presented in the scenario detailing basic geography, populations, and main industries.

The Wires section, shown in Figure 9, replicates the types of stories provided to subscribers by newswire services like Australian Associated Press (AAP). The stories created for this scenario were based on AAP stories from the period of flooding in New South Wales in August 1998. There are weather forecasts, stories about the flooding in Lagoon, and stories that cover events related to storms affecting other areas of the state. The wires stories provide users with some information that can be incorporated into exercises, give a sense of the significance of local events in the "bigger picture", and can

also serve as a distraction that users must sort through to get to information relevant for stories about the Lagoon flooding.

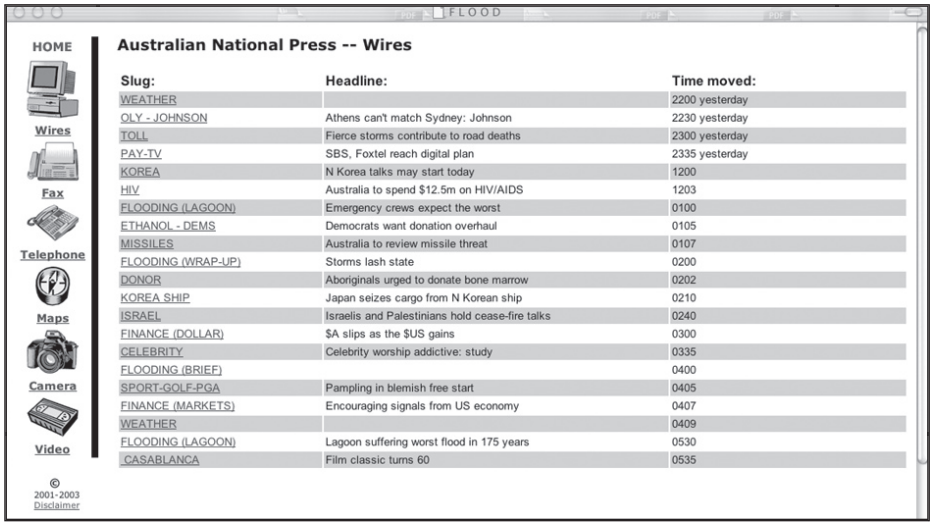


**Figure 9: *Flood* project – the Wires page.**

The Fax section, shown in Figure 10, provides a similar news function to the wire service stories.

Students can check the fax in-tray to view media releases from various sources, as well as regularly distributed updates from the Police and the State Emergency Service. Again, these are based on real materials gathered in the 2MCE-FM newsroom during actual flooding in Bathurst in 1998. The material provides a general background to recent events, and also provides a good starting point to pursue possible stories. The news value of some material is immediately obvious, such as SES updates about the evacuation of residents or Police warnings about road closures. Some, such as information about the SafeFlight helicopter being called to the Lagoon area, are also the trigger to reveal bigger stories that unfold when information is checked with sources.

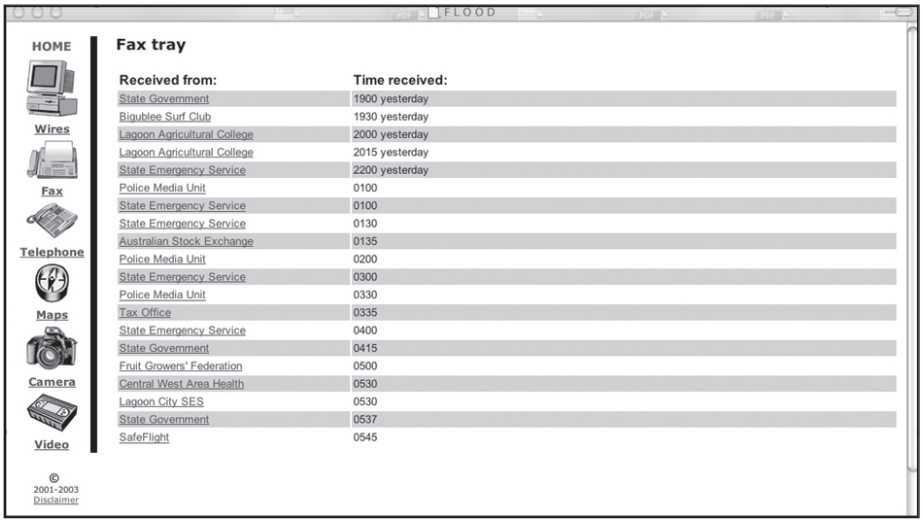


**Figure 10: *Flood* project – the Fax page.**

The Telephone book is an alphabetical listing of people and organizations that might serve as news contacts. An example of this screen is shown in Figure 11.

Clicking on a hypertext linked telephone number "dials" the phone, taking the user to another page. Some calls will prove fruitless with no answer, a recorded message, or no useful information provided by the source. Some calls will be answered by a contact who provides information, usually in the form of question choices presented as hypertext links. These take the user to another page containing responses and further question choices.

In the case of one contact, chatterbot software provides users with the opportunity to interrogate that contact for information using a text-input form (see Chapter Seven).

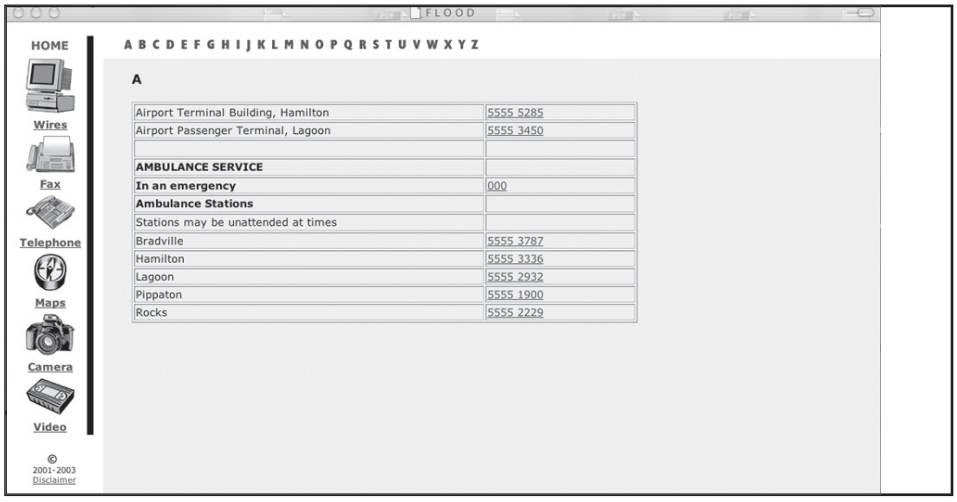


**Figure 11: *Flood* project – the Telephone page.**

The Maps button takes the user to a map of the city of Lagoon, which shows streets and locations that are referred to throughout the scenario. Users can go to an enlarged version that is more suitable for printing as a hard-copy. Another map shows the location of towns, main roads and rivers in the fictional region, and a larger version is also available for printing. An example of the large Lagoon street directory is shown as Figure 12.

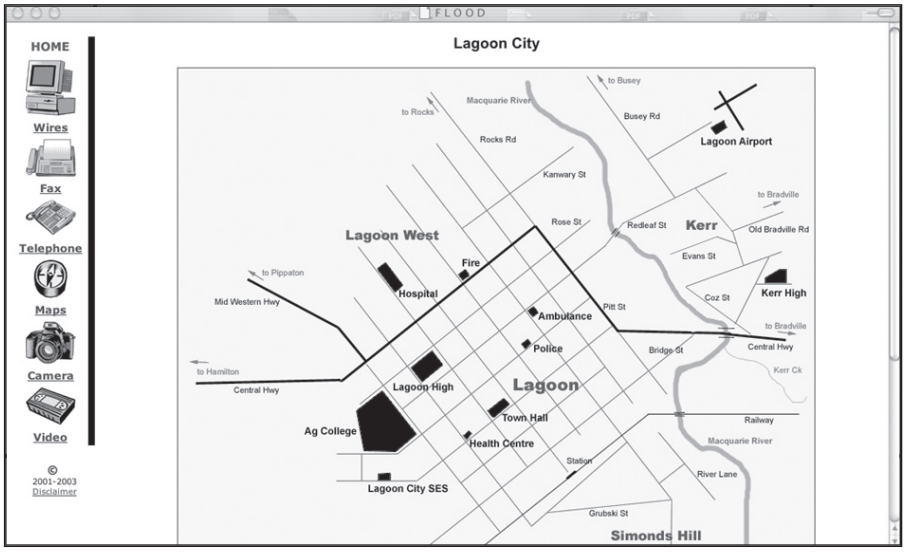


**Figure 12: *Flood* project – enlarged Lagoon city map accessed from the Maps page.**

The Camera navigation button takes the user to an online photo gallery of scenes of the flooding, shown in Figure 13. The images are actually taken from video footage of the Bathurst flood in 1998, but they have been renamed to reflect fictional events and locations from the scenario. In classroom exercises students might be asked to select images from the photo gallery to illustrate their news stories. Users can click on a smaller thumbnail image to be shown a larger version of that photo. Users can also browse through the larger photos individually in sequence using navigation arrows contained on those gallery pages.

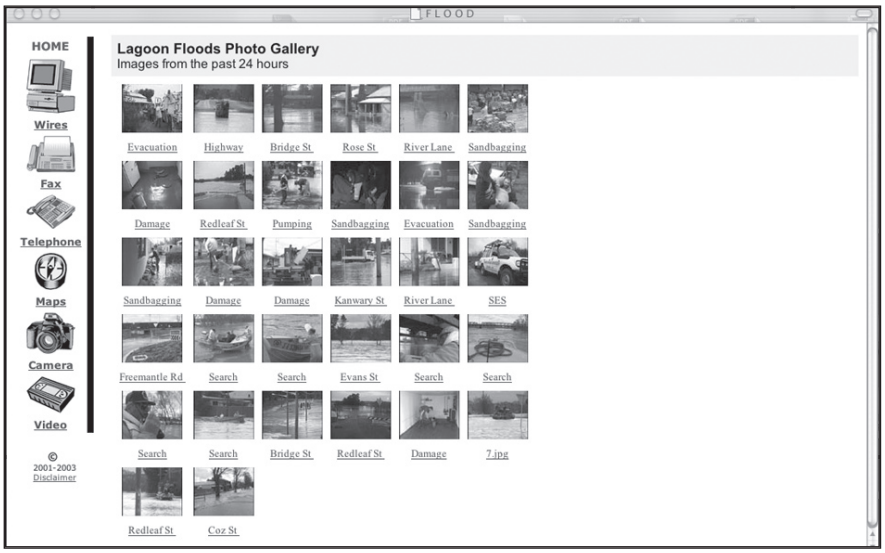


**Figure 13: *Flood* project – the Camera page.**

The Video navigation button takes the user to a library of short video clips, shown in Figure 14. This footage shows the 1998 Bathurst floods, but here it has been edited and labelled to reflect the fictional scenario presented in the *Flood* training package. The sequence of clips presented here show an SES boat crew searching the flooded river at Lagoon for children reported missing. The video is presented in *QuickTime* format, which should be accessible to most users as players are available for a variety of operating systems. These clips can also be imported into the desktop video editing systems used in

the CSU computer laboratories, and students could therefore be set a task based around production of a short television news story. These clips have been compressed for Internet delivery, but higher quality versions could be included on CD-ROM.

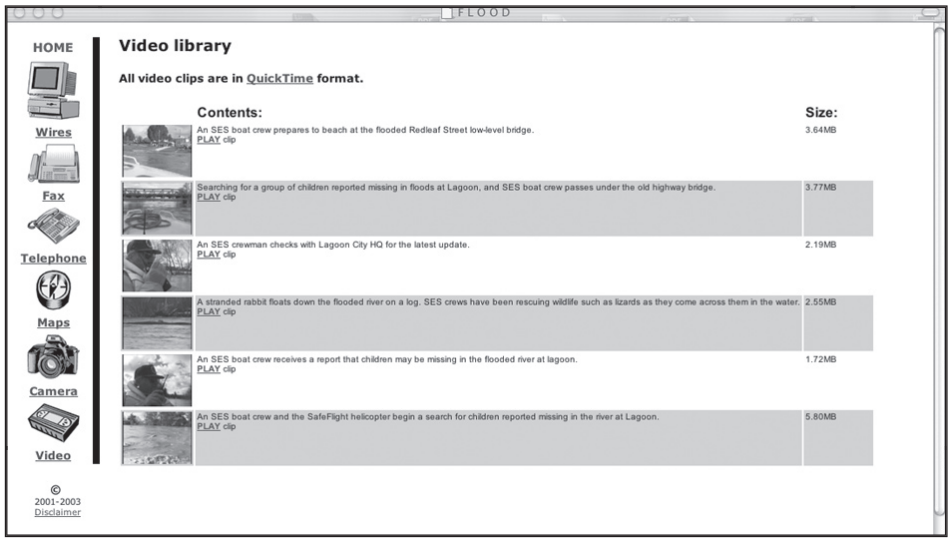


**Figure 14: *Flood* project – the Video page.**

How students use the scenario depends to a degree on the tasks they have been set by their teacher. They could be initially directed to contact a specific source, such as the Police, and to follow up any story leads that might eventuate. This would be a useful exercise in following a news "round" or "beat". In this example, students could learn rather quickly from the Lagoon Police (contacted directly via the Telephone book) that a search is getting underway for children feared missing in the floodwaters.

A more general approach might require students to browse through the Telephone book, contacting sources that might appear likely sources of stories and information about the flood. That could lead them to any number of possible stories such as house evacuations, a road accident in which a car has driven into a house, fears about the safety of the local water supply dam, disruption to road and rail services, or counselling services available to flood victims. There are also several "red herrings" scattered throughout the scenario,

such as reports of minor incidents (not related to the floods) that are detailed at length by some sources.

### 8.2. Example of a developing narrative – the Police search

The main "breaking" story incorporated into the scenario is that of a search getting underway for children feared missing in the floodwaters at Lagoon. This provides an example of how users may seek out information using different sources from different directions. I will use the second person to describe how you might navigate the site. One possible entry path to the search story is via the fax in-tray. There is a media release from the fictional SafeFlight medical retrieval service, outlining that a rescue helicopter has been based in the Lagoon area to assist with evacuations during the flood. That is an interesting story in itself, but there is more information to be gained. The media release contains a phone number for the SafeFlight service, which you can "dial" by clicking on the hypertext link. The screen showing the SafeFlight facsimile media release is reproduced in Figure 15.


**Figure 15: *Flood* project – the SafeFlight fax.**

A call to SafeFlight connects you to the character of the Director, Mira Carter, and your conversation is represented as a new webpage (shown in Figure 16). You are presented with questions as hypertext links:

- Why has the SafeFlight helicopter been moved to Lagoon?
- What facilities are needed in the Lagoon region?

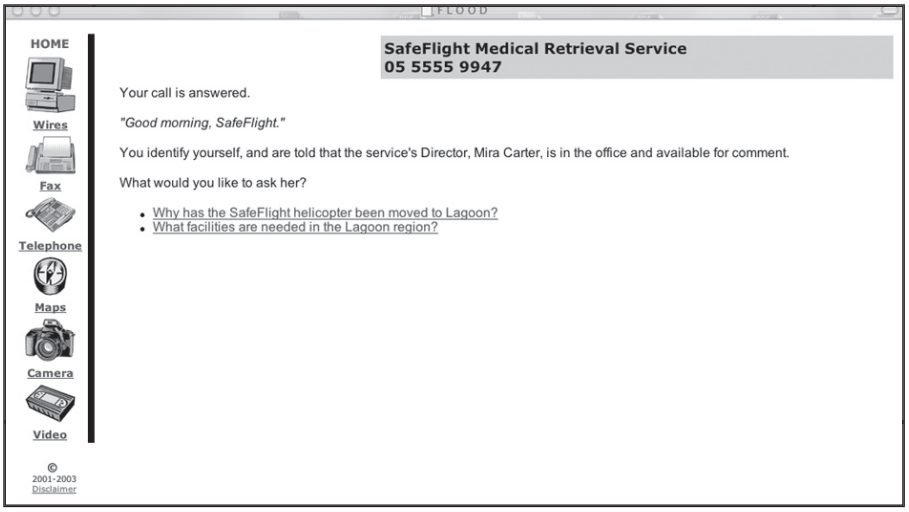


**Figure 16: *Flood* project – the SafeFlight contact page.**

Selecting the first option leads you to another page of information from Mira Carter, who comments that the helicopter is being used in a rescue operation. A further question option now presents itself:

- What is that search and rescue operation?

Following that link reveals the information that Police have asked the helicopter to join a search for some children seen playing in the floodwaters, and that a break in the weather should allow the pilot to get underway soon.

You are now presented with the question:

- Is it possible for me to contact your crew in Lagoon?

This leads to a dead-end, as Mira Carter advises you that it isn't possible to contact the crew during their mission.

Having been alerted to the fact that a search is underway, you can now pursue other contacts in an effort to find out more details. An obvious choice is to ring the Police in Lagoon to try and find more information.

Turning to the Telephone book section of the scenario, you find several police numbers listed. This screen is shown in Figure 17.

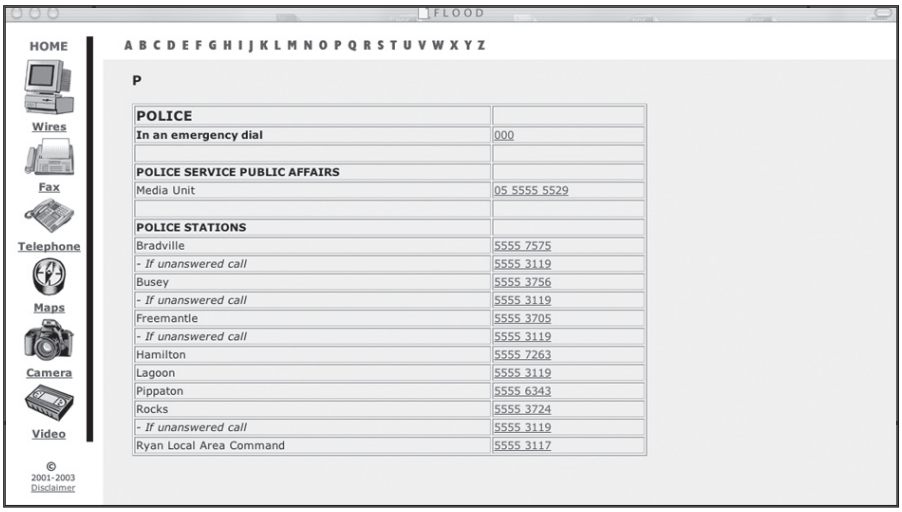


**Figure 17: *Flood* project – Police telephone number listings.**

The first is the 000 emergency number. You "dial" that number, which produces a message indicating that this number is for emergency numbers, and that the telephone contact book should be consulted instead for other calls.

The next number listed is for the Police Media Unit, which connects you to the character of a media spokesperson, Jody Ripley.

A number of question options are listed here, relating to different stories included in the scenario:

- What do you know about road closures in the Lagoon area?
- What can you tell me about the state's road toll?
- How bad are road conditions around the state?
- Do you know anything about a search and rescue operation near Lagoon?

Choosing the question about the search and rescue operation produces the response that the Media Unit doesn't know about that operation as yet, and you are advised to contact the Lagoon Police Station directly.

Returning to the contact book, you dial the Lagoon Police station. As shown in Figure 18 Senior Constable Price answers your call. He can be asked several questions relating to events in the area:

- Has anything been happening overnight?
- What do you know about road closures in the Lagoon area?
- May I speak to the Duty Officer please?
- Do you know anything about a search and rescue operation near Lagoon?

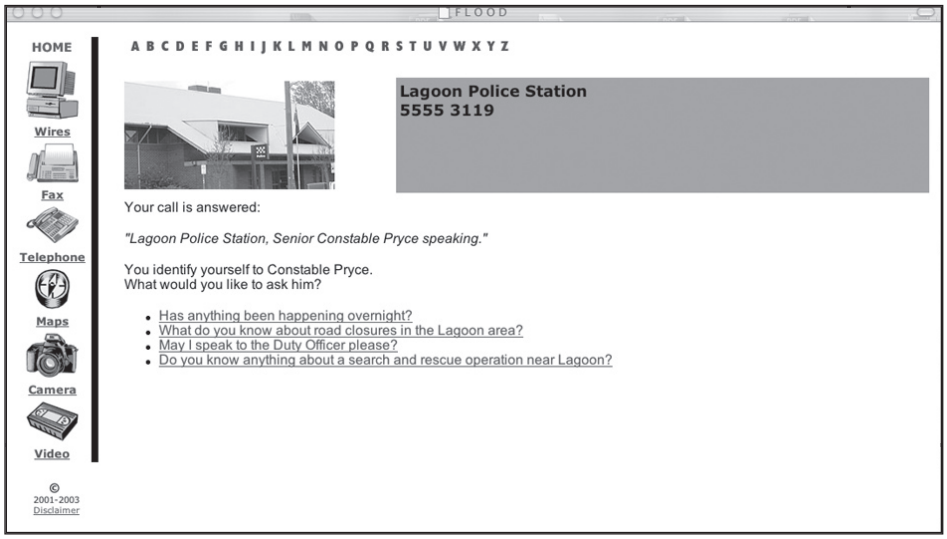


**Figure 18: *Flood* project – the Lagoon Police Station contact page.**

While this character knows some information about road closures he generally isn't very forthcoming with any other useful information, particularly regarding the search for missing children. However, if you ask to speak to the Duty Officer, you are connected to Sergeant Ian Brandle. He is much more forthcoming with information about events in Lagoon, including the search and rescue operation that's getting underway. You learn that a jogger saw some children riding bicycles in the floodwaters, and was concerned enough to call the Police. When a patrol arrived shortly after, they found two bikes but no sign of the children. You learn that the SES is about to search the area by boat, while the SafeFlight helicopter is also involved.

In this case, you might now choose to call the SES to try and find out more information. The telephone contact book lists several numbers for SES units in the region, and also the Divisional HQ. If you try to call the Divisional HQ, you are told that that the person you need to speak to isn't available for media inquiries at the moment, and it is suggested that you contact local units instead. You contact the Lagoon City SES Unit via the telephone book, which connects you with the Deputy-Controller, Sue Clements.

There are two version of the Lagoon City SES Unit page, and which one you encounter depends on the status of the externally-hosted chatterbot software used for the scenario. If the chatterbot link is operational, you will have the option of being connected to the Controller, Tim Heaps. You may then interrogate the character using a text entry box (see Chapter Seven). If the chatterbot is not operational, then you will be told that Tim is unavailable but Sue Clements will be willing to answer some questions. The chatterbot version of the page is shown in Figure 19.

In this example you will continue by interviewing Sue Clements. You are then presented with some hyperlink options:

- What do you know about a car accident in Coz Street last night?
- What can you tell me about the search and rescue underway this morning?
- How many homes have been evacuated in Lagoon?
- How bad is the flooding?
- What roads are closed in the Lagoon area?

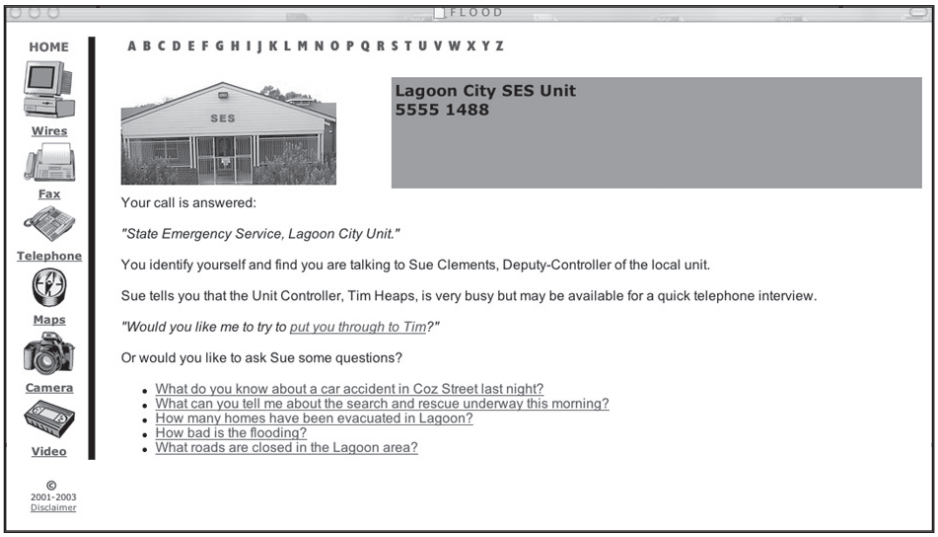


**Figure 19: *Flood* project – the Lagoon City SES contact page.**

Sue doesn't have much information about the rescue, only that a flood boat is joining the search and that the SafeFlight helicopter is involved. The chatterbot character of Tim Heaps, if asked about the search, might offer similar information if the appropriate questions are asked.

You may also wish to get a sense of what is happening out on the river. While not providing much background information, the video library contains footage of the flood boat search. You can access the library by clicking on the Video navigation button or link. Clicking on the image or Play link will then open the clip in a QuickTime player window, as shown in Figure 20.

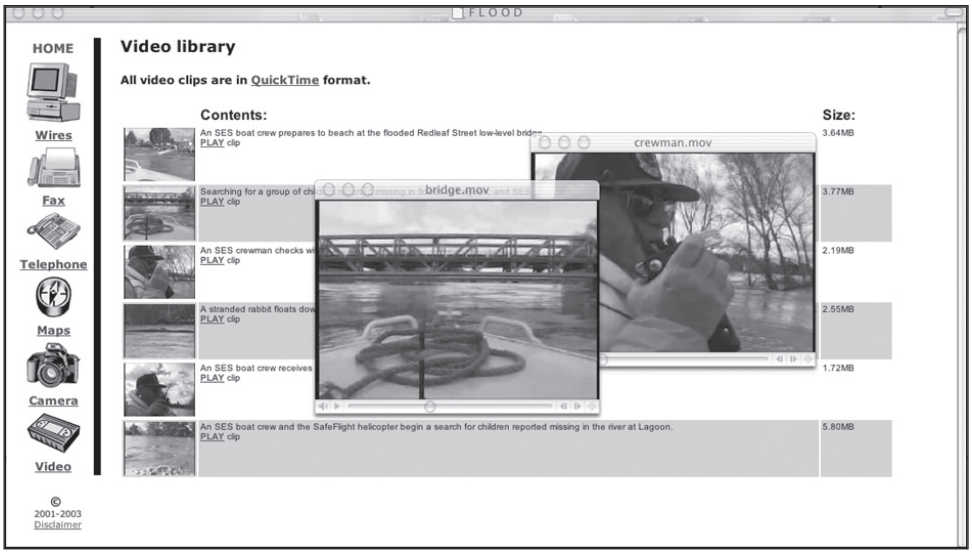


**Figure 20: *Flood* project – video clips play in pop-up windows.**

This example "walkthrough" illustrates the multiple entry paths into different narratives contained in the scenario. A user could have initially found out about the search operation by contacting either the SafeFlight Director, the Police Media Unit, the Lagoon Police Station, or the Lagoon City SES Unit. The audio in some of the video clips also refers to a search for children. In fact, there are "clues" to the unfolding story contained at other sources throughout the scenario, such as the Lagoon Airport groundsperson who tells

you that the SafeFlight helicopter has just lifted off to take part in a search for children missing in the floods. There are other narratives in the scenario that can be pursued in similar fashion. These include a road accident in which a car has crashed into a house, and fears about the safety of the local water supply dam.

The narrative structure of the scenario is typical of hypertext fictions (Ryan, 1997: 687). The system does not control narrative continuity beyond the local level, in that users are free to enter from a range of points and can jump from source to source using navigational structures like the telephone contact book. This has implications for the design of events in the scenario, as the author cannot presume that sources will be contacted in a particular order, or that characters will be asked questions in a particular sequence. This is unlike some other forms of interactive fiction, such as computer adventure games, in which certain information is revealed in chronological sequence or is only available to the user if certain conditions are met. The user of the *Flood* scenario has access to all the available information, but the user teases out their own narrative by the sequence in which they choose to pursue certain stories.

### 8.3. The first classroom trial

The simulation was first presented to two tutorial groups for the subject JRN101 Newswriting in Spring Session (July – November) 2001. CSU students majoring in journalism or public relations as part of their BA (Communication) take the subject in the first year. The main aim of the trial was to put the Website and chatterbot component through their paces to see if any immediate problems emerged. Interestingly, only a couple of students made it as far as the chatterbot section of the site (the character of Tim Heaps, the Lagoon City SES Controller). The server logs revealed some attempts to ask the SES Controller some questions, but the under-developed *ALICE* agent had responded almost entirely with default answers using the degradation process outlined in Chapter

Seven. The students had clearly moved on after a few attempts, so it was not a great success in terms of its intended use. However, as a test of the functionality of the Website it was a success. The site worked as expected, and even this early test provided some ideas on how to improve the functionality and "playability" of the simulation. It was also an opportunity to gauge student response to the new approach, as it was sprung on them without warning.

The scenario was presented to the class as a simple newsgathering/newswriting exercise in which students played the role of radio journalists arriving at work to find an emergency developing. See Appendix 2 for a copy of the class handout. The students were working in an on-campus computer laboratory. They were given a brief explanation of how to navigate the Website, and then given one hour to work in pairs to prepare scripts for a two-minute local radio news bulletin about the floods. The students were encouraged to consider stories that would be of obvious relevance to an audience in a real flood emergency such as road closures, house evacuations, loss of life or property and when the worst would be over. Having had a chance to browse through the site working on general stories, the students were then given another hour to work as individuals to prepare the script for a 45-60 second radio piece on an aspect of the floods they thought would be newsworthy. They could include quotes based on the information provided by the characters they encountered. The final task required was to complete a feedback form and submit it to their tutor.

The feedback form asked students to reflect on their experience with the scenario and comment on various aspects of its use. It was not intended as a scientific instrument, but would provide a structured opportunity for the students to offer some constructive commentary on their experiences. They were asked to rank their agreement or disagreement next to a range of statements. In total 44 students responded to the survey

questions, and on average most agreed or strongly agreed with the statements that overall, the Website:

- helped me to understand the process of newswriting;
- stimulated my interest in the class exercise;
- was easy to use;
- was well-constructed and worked as expected;
- provided realistic scenarios;
- provided adequate information required to complete the class exercises; and
- made good use of available technology.

Appendix 3 summarises the questions and the results. A majority of the respondents (98%) also agreed that they would like more class exercises in a similar style. Although not a rigorous research-based survey, it corresponds with anecdotal feedback given to the tutor, who reported that several students had indicated that the exercise had been much more engaging and useful compared to the paper-based tasks they'd encountered in the subject thus far (R Elliott, September 2001, pers, comm.).

Space was also provided on the feedback form for students to comment on aspects of the exercise they found useful or good, and on aspects they would like to see changed. This comment is typical of those recorded:

> "This exercise was FAR, FAR more exciting than any we've done this Semester – it actually made me want to write the story & understand how to differentiate between important news & not so important. I found this very enjoyable!!" (Anonymous JRN101 student feedback 2001).

These open-ended comments can be roughly broken down as follows:

***Sources***

Students enjoyed having to seek information, rather than just being given chunks of information to base their stories on. Some also liked the fact that some sources were useful and some weren't, which they felt represented the problems they would encounter working as journalists. One student commented that the different types of sources available in the scenario - such as faxes, wire stories and characters – also made the exercise more engaging and realistic. A couple of students suggested that there was too much information, which made it hard for them to identify relevant stories.

***Technology***

Several students commented that they were impressed by the use of technology in the exercise, and enjoyed the Web-based approach. The chatterbot component was praised by several, though often with the caveat that it needed more work and hadn't provided much useful information for their stories.

***Hands-on training***

Several students commented that the exercise was a more hands-on approach to newswriting than had been encountered in the subject thus far, as it required them to gather and sort information as well as re-write it into a news story. Several specifically liked this research aspect of the task, and found it an enjoyable challenge.

***Realism***

General comments included reference to the fact that the scenario was based on realistic events that the students could easily accept as being real, or similar to events they might encounter as working journalists. Several also felt that aspects of the exercise gave a sense of what it might be like to work as a journalist, which they hadn't felt from previous class exercises. One student suggested that there be more contact possible with residents

of Lagoon to add a sense of realism, and that more general population information could be provided.

***Deadlines***

Several students commented that the sense of working to a deadline was strong in the exercise, and that this added to the excitement and realism. Several others commented that they felt they hadn't been given enough time to complete the tasks and that they'd prefer "less stress".

***Assessment***

Some students commented that they didn't like the component requiring them to work in pairs for part of the task. Some of these concerns related to assessment, others related to the physical practicalities of sharing information in the computer laboratory.

### 8.4. The second classroom trial

The scenario was used again in the JRN101 Newswriting class in Spring Session (July – November) 2002. Some cosmetic changes had been made since the previous year, but the contents remained fundamentally the same. This time the chatterbot was not used, as it was felt that it still lacked a level of "knowledge" about events to make it useful for this trial. The students were working in an on-campus computer lab. A different scenario was presented to this group of students. They would work as individuals to produce two 3-5 paragraph newspaper stories, which could include quotes from sources in the scenario. They were also asked to choose pictures from the photo gallery to accompany their stories, and they were asked to complete an online feedback form. A copy of the class hand-out is provided as Appendix 4.

Again, the bulk of the feedback from the 45 students was positive, with a majority of

students indicating they had enjoyed the exercise and had found the Web-based scenario easy to use. They were again asked what they had liked, and what they would like to see changed. The results were very similar to the previous year's cohort, with 96% of the respondents indicating they had enjoyed the *Flood* exercise. 70% of the students who completed the survey indicated they preferred computer-based exercises to paper-based exercises.

Once again, the survey was primarily designed to be an avenue of quick commentary on their experiences rather than a rigorous research-based assessment. Many of the comments were along similar lines to the first trial, with students indicating they had enjoyed the practical nature of the exercise, the sense of realism, and the need to search out the stories and information. Comments on what they'd like to see changed in the scenario were also along similar lines to the 2001 classes, with complaints about not having enough time to complete the tasks or assimilate the information presented in the scenario. Several expressed dissatisfaction with the fact that not all sources were useful. One, perhaps tongue in cheek, requested "more people to answer their damned phones!" (Anonymous JRN101 student feedback 2002). Several also suggested that the pre-written question structure was limiting, and that they'd like to be able to ask their own questions. This gives further weight to the need to develop the chatterbot software further. There were also requests for more photographs, or for more dramatic images with which to illustrate the news stories – a fair comment given that the images provided were taken from video footage without regard for the news values and aesthetics of photojournalism.

The tutor for this subject, Associate Lecturer Rob Elliott, was again very enthusiastic about the value of the exercise for the Newswriting class. He felt that it was a welcome relief for the students from the weekly paper-based writing exercises, and that the students clearly gained great satisfaction from having to pursue stories through the scenario rather than just being given the facts to write about (R Elliott, October 2002, pers. comm.).

The only downside he perceived was the lack of a clear teacher's marking guide to the scenario containing facts such as character names and titles, place names, and synopses of possible stories. This is a valid concern, as without such a guide teachers would have to spend considerable time working through the scenario to learn these details before being able to assess the accuracy of students' work. I provided marking assistance for these trials, as it gave me access to the students' work so that I could track how they made use of the material, but this was only a temporary arrangement.

### 8.5. The third trial – Distance Education version

The scenario was also trialled with a small cohort (8) of postgraduate students enrolled in CSU's Master of Arts (Journalism) program in Spring Session (July-November) 2002. The students were all studying the subject JRN509 Digital Journalism via distance education (DE). This was the first trial of the scenario for an external group of students, and they were working on their own computer equipment with no face-to-face staff contact. The *Flood* Website used was identical to that used by the internal students in the second classroom trial described above.

This trial required the DE students to produce Web-based stories for a fictional news Website. They were given some background information to explain their role as Content Producers, and a brief on the situation in Lagoon. A copy of the assignment details is provided as Appendix 5. The students were required to produce a small Website containing one main story and at least two smaller stories. Students were expected to include images (sourced from the scenario or elsewhere), and links to relevant external sites. As this was a subject in journalism, not Web design, the students were given the option of presenting the material as a working Website or as a mock site using Microsoft Word. In the end, about half produced a Web-based version. The DE students were also asked to voluntarily complete an online feedback survey.

There were five responses to the online survey, and again it was intended primarily as an avenue for structured but informal feedback. The students all reported that the Website had been easy to use and navigate, and that they had not encountered any technical difficulties using the scenario. All of the respondents generally responded positively to the exercise and expressed their interest and satisfaction with the assignment, a typical response being:

> " I found this a very realistic, user-friendly exercise that simulated many of the dilemmas that journalists and editors would face on a day-to-day basis"
> (Anonymous JRN509 student feedback 2002).

There were few suggestions for change made by this cohort. One suggested a tighter brief for the exercise, with more information provided about the intended audience and the production process of the fictional Website they were writing for. Another suggested that more interactive elements would be useful. Overall though, the DE students reported similar comments to the internal students as regards their enjoyment of the level of realism, the need to search for information, and the interaction with the news sources.

### 8.6. Summary of Chapter Eight

This chapter has described the basic process used by users to navigate through the *FLOOD* training package. It has also outlined a typical approach to following one story through the scenario, highlighting the multiple entry-points allowed by the use of a hypertext-based narrative structure.

This limits the possibilities of developing a chronological sequence of events within the scenario, as it is not possible to presume the order in which sources will be contacted. The user teases their own narrative out of the material by the order in which they choose to pursue certain stories and contacts.

This chapter also describes the feedback gathered from three trials of the package. The *FLOOD* has been used with undergraduate internal and postgraduate external students of Charles Sturt University. In general, the response of students in each trial was very positive, and the feedback provides a useful guide as to what works and what might be improved.

The next chapter provides a concluding discussion and summary of this thesis, as well as offering some suggestions for further development of simulated journalism training resources like the *Flood* project.

# CHAPTER 9

# CONCLUSIONS AND IMPLICATIONS

This concluding chapter discusses the implications of the *Flood* project and digital game-based learning as a method for journalism education. This includes consideration of flexible delivery and assessment issues. Some directions for future research are then canvassed.

## 9.1 Strengths & limitations

### *Time and resources*

The depth to which digital game-based learning materials could be evaluated by this thesis was limited by a lack of high-level computer programming access and resources. Working within a Web design skill set allowed for the creation of a reasonably complex hypertext narrative, incorporating multimedia elements. Yet, compared to the sophistication of current video game offerings, it remains a relatively "low fidelity" simulation of the events depicted in the scenario. As a result, levels of interactivity and immersion were quite low compared to the intensity that is achieved by some games. The current version of the *Flood* Website does not include some of the elements more traditionally associated with computer games, such as the ability to track progress and adjust narratives based on user input. The *Flood* scenario does not keep a score of how successful a student has been at seeking out news stories. Nonetheless, as a prototype it does allow for a general assessment of the potential value of this approach to learning and teaching.

Educational simulations, whether they are computer-based or not, can take a lot of time to prepare. As discussed in Chapter Four, there may be resistance to digital game-based

learning due to a perception that it is more time and resource intensive than traditional teaching methods. This is a similar obstacle to that sometimes encountered by problem-based learning, although it is also possible that the use of simulations like *Flood*, which students could access outside of normal class schedules, may free up time for individual face-to-face interaction between teacher and students.

Certainly the *Flood* prototype did require significant time and effort compared to traditional teaching approaches. It was completed in my spare time over a period of about six weeks; I also had access to the hardware and software required, and a skill set that included online media production. In this case I began with a lot of raw material already prepared, such as video footage, flood images, and archival material on which to base the scenario.

Having worked through this process once I would expect development of similar materials could be more streamlined in future, for example by using the same basic navigational framework as a template. While production of a similar Web-based package could be a more difficult prospect for many journalism educators and trainers unfamiliar with the production of online media, I would suspect that many would have several well-tested simulation exercises in their repertoire that might benefit from even some simple online or multimedia enhancement.

***Cost***

The *Flood* project was produced with no budget as a research project. It used resources available to me at Charles Sturt University such as digital still and video cameras, media production software, and computer hardware. It is likely that the development of such projects would in reality require a considerable investment of time, money and resources to produce. This would certainly be the case if higher-level programming elements were

desired. Given that educators already point to budget and computer resource limitations as a barrier to introducing more widespread industry practices such as computer-assisted reporting to the curriculum, the development of teaching innovations like game-based learning may not be accorded a high priority.

However, Deakin University's development of *HOTCopy* would suggest a growing recognition of the value of network delivered multimedia training simulations. Deakin states that there is commercial potential for the project; for example newspaper editors from regional Victoria have expressed interest in developing staff training scenarios (Deakin 2003). Columbia University are already offering their *Fire scenario* to a Web audience for a small fee, so a basic cost-recovery model may be emerging. Comparatively simple projects like *City Council* and *Flood* prove that low-fidelity exercises can be developed and deployed successfully by enthusiastic teachers with some Web design skills. Even artificial intelligence agents like the chatterbot used in *Flood* are freely available.

***Training value***

Is it worth the effort to move towards a digital game-based approach for journalism training? It is clear that such tools should not be considered as a complete replacement for the range of traditional training methods used to give students a sense of the craft skills of journalism. It is difficult to conceive that computer-based simulation would be a more effective learning experience than industry internships and production-based exercises. An exception might be in areas like database research or digital image manipulation, where computer-based training would appear to be a logical approach. Some core journalism skills, such as door-stop interviewing, simply do not readily lend themselves to simulation.

However, my work with the *Flood* prototype does suggest digital game-based learning can complement existing training approaches by requiring students to use a variety of core journalism skills that can be transferred to real reporting situations. For example, students must assess the relative news values of possible stories they encounter in the scenario, and visit several sources in order to verify and expand on the information they are receiving. It is also possible that future development of software agents like the chatterbot could improve the ability of these training tools to simulate interview situations.

A training tool like *Flood* also presents students with multiple narrative pathways, which can bring to bear skills in information synthesis and problem-solving. The training package is not a passive resource – it requires the student to actively choose which narratives to unravel, thus contributing an immersive element. There is a parallel here between the cognitive skills required to play some forms of video games, and those expected of professional journalists. It was clear from the student feedback, outlined in Chapter Eight, that many students were challenged by the research or problem-solving aspects of the scenario. The simulation also exposed students to deadline pressures, and provided some hands-on writing exercises.

Also apparent in the student feedback was that the use of the *Flood* package was a welcome break in the normal classroom routine. As discussed in Chapter Three, Malone (1981) argues it is possible to develop materials that are intrinsically motivating due to a combination of fantasy elements, curiosity and challenge. Using digital game-based learning materials to complement other approaches could be a means to maintain or reinforce student mastery of the subject matter.

***Delivery***

Compared to other training resources there are some things a computer does well. For

example, the use of online or CD-ROM based tools like *Flood* means simulation material can be available around the clock. This is particularly useful for distance education situations, or where it is appropriate for students to be able to work on material at their own pace or outside of class times. Computer-based material can also be delivered repeatedly and consistently, and can incorporate a range of media to enhance the experience.

Web-based packages like *Flood* can also be designed to suit a majority of computer platforms using freely available software, rather than being built as a proprietary software system. Existing Internet technology allows for such materials to be placed behind password protection to limit access, or cost-recovery mechanisms that allow a user-pay model to develop.

A possible concern with the existing hypermedia approach used to create the *Flood* prototype is that it quickly generates a quite complex structure of individual pages. It can be difficult to develop and track consistent connections between related narrative elements in the design stage. Also, a concern with the *Flood* prototype is that the scenario itself may be too complex for students to quickly grasp. While the navigation through the site seems simple enough, some students did suggest there was too much information to digest. On the one hand it could be argued that the ability to digest and synthesise information quickly, often in an unfamiliar context, is an important skill of journalists. However, some students suggested that more background information would help them get a handle on the fictional setting of the scenario. Providing more time for students to familiarise themselves with the lay of the land, or even using the material several times for different exercises, might help overcome any sense of disorientation.

Similarly, the complexity of the *Flood* scenario can be an obstacle to assessment of the student work produced. In the trials of this prototype I volunteered to assist with marking, as I was familiar with the characters, narratives, and events contained in the scenario.

Clearly it would take time for another teacher or trainer to develop that sort of knowledge of the scenario. Implications for assessment are discussed later in this Chapter, but clearly the complexity of digital game-based learning materials has an impact on teachers as well as students. Development of an instructor's manual is one possible future development for the *Flood* project.

## 9.2 Implications for journalism education and training

### *New teaching methods*

The emergence of teaching frameworks like Prensky's digital game-based learning model articulates a growing awareness amongst educators of the potential to exploit multimedia and computer network technology to a greater degree in the production of learning materials. Video and computer games are clearly a popular entertainment medium, and increasing interest in their application to education parallels their increasing sophistication and pervasive presence in popular culture. As noted in Chapter Three, educators and trainers "ignore or slight the Nintendo generation, or indeed demonize them, at their own peril" (Green, Reid & Bigum, 1998). In fact we are already beyond the Nintendo generation – the past five years have seen significant advances and refinements in consumer technology and digital media.

Journalism training materials can accommodate a generational change, in which students see technology as both a tool and a toy. Digital game-based learning is not simply about the use of on- screen "eye-candy", but acknowledges that networked digital media afford opportunities for imaginative, engaging and intellectually challenging teaching resources. Journalism education and training has always tended towards a hybrid of instructional and practical teaching methods. Digital game-based learning adds another useful facet to that approach, in that the learning materials could in themselves provide varying degrees

of motivation and reward. The *Flood* prototype represents an effort to move towards adoption of a "technology-as-partner" approach to journalism training that reflects the range of networked digital resources now available.

***Distance Education design***

The use of digital resources like the *Flood* prototype offers a flexible option for delivering journalism training. While face-to-face training situations have been able to employ a range of methods of providing practical journalism experience, it has been difficult to replicate that for a distance education cohort. This project was in part motivated by a desire to provide a group of external postgraduate students with an opportunity to practise some reporting skills.

Converging telecommunications systems, information technology and media content have created a new kind of teaching space. While distance education cannot replicate fully the experiences gained from face-to-face interaction, online technology offers different learning and teaching opportunities. The *Flood* prototype suggests one way in which the training experiences of distance education journalism students could be enhanced. The flexible delivery options afforded by the Web or CD-ROM also mean that exercises can be provided for internal students, possibly freeing up class times for other activities. Digital game-based learning could mesh well with a general learner-centered approach to teaching, in which students can choose the most appropriate learning resources for their needs and situation.

***Assessment***

As noted earlier in this Chapter, the complexity of the *Flood* scenario can be an obstacle to assessment of the student work produced. The production of an instructor's guide,

including information regarding assessment, could be a simple way of enhancing the useability of the *Flood* prototype.

Some computer-based training resources have built-in assessment mechanisms. Video games inherently have some form of scoring system, by which a player can measure their progress. This prototype of *Flood* does not contain an assessment mechanism, relying on instructor assessment of the material produced by students using the scenario. The development of automatic assessment processes was beyond the technical scope of this trial project. Digital game-based learning materials can take full advantage of the computer environment to automate some aspects of usage, such as tracking a student's progress through the scenario and providing alternative pathways based on previous input. Current server and database technology would allow for such customisation. Thus narrative content of the scenario could change over the course of an exercise, rather than representing a frozen moment as is currently the case with the *Flood* package.

It should also be noted that feedback from the student trials of the package also indicates that care needs to be taken with assessment when developing class exercises. Some students did not like the group work approach taken in some of the CSU trials. This is partly the result of general concerns such as how individual contributions will be assessed, but also reflects the need to consider mechanisms for collaborative work. This is particularly relevant for materials that might be considered for flexible delivery options, where the possibility of online collaboration could be considered. Again, this is an area for future consideration and development.

## 9.3 Directions for future research

### *Chatterbots*

Possibly the most interesting potential training tool examined within this thesis project is the chatterbot artificial intelligence software. AI agents like the *ALICE* chatterbot offer the potential to incorporate natural language interrogation of the characters in a computer-delivered training scenario. This could enhance the learning experience for students by allowing them to develop interviewing skills as part of the exercise. The *ALICE* chatterbot used in this project did not require extensive programming skills to establish a basic functioning example, although it does take time to work through possible queries and suitable responses. The software does allow for this to be an iterative process, with records kept of sessions to guide on-going development. Also, it was available for free from the Internet.

If barriers such as the time and expertise needed to program them can be overcome, chatterbots have the potential to be a stand-alone training element, providing an online tool for practising interviewing techniques. It would allow students to interview the same "talent", so that an educator could compare student approaches across the whole group. The development of software tools to simplify the programming process would make chatterbots like *ALICE* a more attractive proposition for educators. For example, the Web-based authoring system developed for the Pandora Website (www.pandorabots.com) is an improvement on the initial "hand-coding" approach, and further refinements may make the process even easier for people with limited time or interest in learning arcane programming skills.

The software, such as the *ALICE* chatterbot used in the *Flood* scenario also includes the capability of logging student interaction, so that analysis might be made of how

students ask questions and react to the responses offered by the software. This could be an interesting opportunity to research the development of interviewing technique, which is often seen more as an art than a skill. The recent development of the free online hosting service for *ALICE* chatterbots also raises the possibility of incorporating more AI agents into the Flood package. The original design only allowed for one chatterbot to operate on a separate server, but potentially all characters could now be converted to characters that could be interrogated by students.

***Exposure to multiple media***

There is the potential to develop a high-fidelity training package based on the *Flood* prototype. The development and incorporation of a range of media elements such as sound, video and images could enhance the quality of the experience. It might also allow for a greater range of craft skills to be developed, such as through the inclusion of audiovisual material that students could edit. Students could be given different roles - newspaper reporter, television journalists, radio journalist, or online producer – and asked to find and manipulate material appropriate for that context. Students could interact with the same material several times but with contexts, getting a sense of the priorities and needs of different media.

Some of the media elements being considered for the next iteration of the *Flood* training package include:

- uncompressed video footage that can be imported directly into video editing software such as *iMovie* or *Final Cut Pro* for TV news production exercises;
- high resolution images or graphics that could be used for print and online news production exercises; and

- audio content, such as interviews with key characters, that could be used for radio news production exercises.

The development of a media rich training tool does have delivery implications. One of the design intentions for the *Flood* project was to make it available via the Web to distance education students. Technical limitations such as bandwidth and computer processing speed mean that elements such as online video can be difficult to download or view for some students. They can become a source of frustration rather than enhancing the experience. While these barriers are less of an issue for on-campus students in a centralised computer laboratory, they have to be considered for online delivery. Until fast network connections can be presumed for a majority of students, it is likely that media rich digital game-based learning resources would be limited to on-site and CD-ROM or DVD delivery.

***Violence and trauma***

The potential for digital game-based learning materials to present disturbing content, and its influence on student behaviour and learning, should also be researched further. As social research into the effects of video games develops, there is an opportunity to examine how the depiction of violent scenarios in training materials may affect journalism students. For example, does exposure to violent training material desensitise students to the victims of violence, or change the emphasis they give to violence in their selection and coverage of news stories? The use of computer-based simulations could be a beneficial way to introduce future journalists to some of the scenarios they are likely to encounter on the job, but in measured doses in a controlled environment. There is existing and ongoing research into the way in which journalists deal with trauma and disasters (see for example Suiter 2001, Ewart 2002; Green 2002; Sykes & Green 2003), and this may be a useful corollary.

***Collaborative learning***

There is also a need to explore ways of taking advantage of the networking capability of computer systems to create collaborative learning environments. Learning as a shared activity is a fundamental principle of the constructivist approach to teaching and learning upon which this thesis is based. While the current version of *Flood* does not include networked communication tools, it has been used as a small group (pairs) exercise in class. There is potential to include facilities such as chat or email or forums to allow discussion of the exercises or scenario content. This could enhance the role of the training package in a distance education context, where students could get a sense of the small team nature of many newsrooms.

As outlined in Chapter Five, the emerging form of collaborative problem-solving known as "immersive gaming" is worthy of consideration for its teaching implications. The desire to produce a mediated experience that effectively hides the medium by which it is delivered, blending fictional narrative with real experience has potential application in education.

***Diffusion of innovation in journalism/education***

Finally, the diffusion of technological innovation needs to be understood better in order to assess the likely acceptance of developments like digital game-based learning. Chapter Six discussed evidence that Australian educators have made use of new technology in the past, such as desktop publishing, e-mail, and proprietary newswriting software. Yet there is limited research into how and why certain technology-based approaches such as digital game-based learning might be adopted more widely, and what factors may help or hinder that diffusion process.

### 9.4. Conclusion

It is easy for educators and trainers to be seduced by technology. It is easy to think that providing students with access to the latest hardware and software will consequently make them more employable. Certainly it is important for future journalists to have an understanding of the current tools of the trade, but most journalism employers are looking for someone who can write a news story, talk to people, ask relevant questions and has enough general knowledge to place issues and events into critical contexts. The reality is that the core skills of journalism - such as interviewing, researching, writing and story evaluation - can be taught without recourse to computers.

It is equally easy for educators and trainers to stick with the educational frameworks they know best, even in the face of a change in the way students perceive learning materials. In a recent discussion about the pros and cons of traditional teaching methods for today's classroom (see for example Fromme 2001; Shepherd 2001; Hinton & Manathunga 2001; Prensky 2002a; Laird 2003), a colleague described how students now appeared to treat lecturers as just another form of media competing for their time and attention. In this context, it is important to consider a teaching approach that seeks to engage with and motivate students.

Simulation and reality are clearly two different experiences, and there is no complete substitute for journalism as it is practised in the workplace. However, as a means for providing students with a controlled exposure to the journalistic process *Flood* is worthy of future development to complement face-to-face instruction in reporting tasks, internships and classroom simulations traditionally used in journalism education and training.

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# APPENDICES

## APPENDIX 1

# ORIGINS OF COMPUTER & VIDEO GAMES

Like the Hollywood studios, games companies judge the success or failure of new products in terms of the dollars reaped in the first days of a major product launch. Games console company Sega sold about US$111 million dollars worth of its Dreamcast console system in the first three days of sales in U.S. stores in 1999 (Snider 1999). Compare that to the opening three-day weekends for three blockbuster movies in recent years: *Harry Potter and the Sorcerer's Stone* (2001) grossed just over US$90 million, Steven Spielberg's *The Lost World* (1997) about $US72 million, and *Planet of the Apes* (2001) took $US68 million at the box office (Movie Times 2001).

Games are clearly a significant sector of the entertainment industry, and there is confusing diversity in the family of related products that can be categorised as computer or video games. These products manifest themselves in a range of hardware and software forms. There are different environments for playing these games, such as in the home, amusement arcade, or online. There are also many genres of games such as strategy, simulation, adventure, and "shoot-em-up". This appended chapter examines the development of some of the basic game forms, leading to the emergence of the interactive adventures and online games that the *Flood* project most closely parallels.

**Defining moments: Let the games begin**

Writing before the development of the World Wide Web, Leslie Haddon suggested that perhaps a more productive approach was to treat games as "by far the most significant manifestation of interactive media to date" (1998, p. 52).

Haddon (1998) breaks games products into four distinct categories based on an historical progression: computer games, arcade games, home video games, and home computer games. A fifth category could now be added to include online gaming.

The first computer games were largely the domain of young (mostly male) computer students and programmers, and were designed and played on the large mainframe computers that graced educational and research facilities in the late 1950s and early 1960s.

Arcade video games were those developed for the coin-operated market that already included pinball machines and jukeboxes. More complex games such as the archetypal tennis game *Pong* emerged in the early 1970s, and the genre had gained a significant place in popular culture by the late 1970s and early 1980s with such titles as *Space Invaders* (1978), *Asteroids* (1980), and *Pac-Man* (1981).

Home video games were developed in the late 1960s and early 1970s, with the aim of turning the standard television set into a home gaming system. Despite several industry booms and crashes over the last 30 years, the market is still worth many billions of dollars a year and includes such contemporary industry leaders as Nintendo, Sony, Sega and most recently Microsoft.

Spawned from the software games that had spread through the mainframe-computing world in the 1960s and 1970s, the home computing market blossomed into a significant games market in the late 1970s and early 1980s. As technology began to allow cheaper and more powerful microcomputers to enter a more general market, games became popular beyond the often-isolated world of computer programmers and enthusiastic hobbyists.

A fifth category can now be added to Haddon's categories to include the technological

advances that allow multiplayer games played over vast computer networks like the Internet. This online or network gaming takes some of the elements of other computer games, but adds the element of real-time interaction with other players. The origins of this style of gaming lie in the development of Multi-User Domains (MUDs) in the early days of the Internet, which allowed many players to simultaneously explore a virtual landscape. There are now Massively Multiplayer Online Games (MMOG), some of which involve tens of thousands of players simultaneously.

Expanding on the above summary of video game categories, this chapter will now briefly outline some of the key developments in the early stages of video game development. Rather than attempting a comprehensive account of the industry's history, the aim is to provide an overview of the elements that have ultimately contributed to this project.

**Anyone for tennis?**

The first known interactive game that could be played on a TV screen was developed in a U.S. government nuclear research facility, the Brookhaven National Lab, in 1958 (Poole 2000, p. 29). Engineer Willy Higinbotham and Technical Specialist Robert Dvorak built a two-player tennis-like game that featured moving blips on an oscilloscope, manipulated by a button and dial on a control box. The display, which they named *Tennis for Two*, entertained public visitors to the lab for a couple of years (Hunter 1998).

But was it the first video game? Certainly many historical accounts of video games regard it as the first genuine interactive electronic game (Hunter 1998; Poole 2000; Consumer Electronics Association 2001). But the courts have subsequently held a different view.

In 1966, Ralph Baer patented a home video game based on a ball-and-paddle concept and played on a home television. Licensed to TV manufacturer Magnavox, the concept

appeared in 1972 with the introduction of the first home videogame console, the *Odyssey*. The original *Odyssey* came with several game cartridges, including the tennis game developed by Baer (Morrison & Morrison 1995; Consumer Electronics Association 2001).

At around the same time, Nolan Bushnell had formed the Atari Company and produced a similar coin-operated game called *Pong*. Like Higinbotham and Baer, Bushnell had created a simple variant of tennis. A *Pong* player would control a knob that moved a small vertical paddle up and down on the side of the screen. Players would move the paddle to deflect a small white dot backwards and forwards across the screen. If you missed a ball, it went off your side of the screen and a new ball was served - and your opponent scored a point (Morrison & Morrison 1995, p. 34).

*Pong* was designed for the coin-operated market previously dominated by pinball machines, and it was to prove very successful. It wasn't long before Magnavox successfully sued Atari on the basis that it was too similar to the *Odyssey* tennis game. Of course both were directly descended from Higinbotham's 1958 experiment, for which he never made a cent (Poole 2000, p. 34).

Ralph Baer argues that he is deserving of recognition as the "father" of home video games, with Nolan Bushnell pioneering the commercial arcade variant. Baer argues that Higinbotham's creation was nothing more than a ballistics demonstration, with no commercial purpose (Winter 1999). Certainly Higinbotham had not attempted to protect his concept, and courts have consistently upheld Baer's patent rights.

In 1976 Atari released yet another variation on the Pong game, but instead of hitting the ball back and forth this time the player used a horizontal paddle to send the ball at a wall of bricks across the top of the screen. The bricks disappeared on impact. Two young

Atari employees named Steve Jobs and Steve Wozniak designed hardware for the coin-operated game, called Breakout. The pair would soon leave Atari and found the Apple Computer Company.

**The space race**

In 1962 a group of researchers at the Massachusetts Institute of Technology (MIT) led by 25-year old Steve Russell programmed *SpaceWar*, an interactive computer game that was played on PDP-1 computers (Consumer Electronics Association 2001). What made this computer different from many others of the time was its use of a CRT screen and a keyboard instead of ticker tape and punch cards. This allowed the MIT computer hackers to create a game that caused the screen display to respond in real-time to player input (Laurel 1993, p. 1; Poole 2000, p. 30).

It was *SpaceWar* that inspired Atari's Nolan Bushnell to pursue the commercial development of video games. In 1971 he had convinced coin-operated trivia game manufacturer Nutting to release an arcade version called *Computer Space*. It was not successful, with Bushnell later admitting that the controls were cumbersome and difficult to learn. One of the lessons he took away from the experience was that video game controls and concepts should be simple, so that people could walk straight up and start playing - and paying (Hunter 1998); hence the subsequent success of the simplistic but addictive *Pong* which Bushnell created for his new company, Atari, in 1972.

Two of the early descendants of these space games were to rank among the most famous video games of all time. The first, and perhaps the most influential, was Taito's *Space Invaders*. Players controlled a moving gun, which raced back and forth along the bottom of the screen to destroy the invading alien enemy, whose hordes marched relentlessly down the screen.

Within months of its Japanese release in late 1978 there was a nationwide shortage of the coin required to play it (Poole 2000, p. 34). Long playing sessions coupled with repetitive button and joystick actions spawned a physical complaint dubbed "Space Invaders' Wrist" by the *New England Journal of Medicine* (Morrison & Morrison 1995, p. 36). In the UK, the supposed addictive qualities of arcade games led Labour MP George Foulke to introduce the "Control of Space Invaders (and other Electronic Games) Bill" in 1981. It was narrowly defeated in the House of Commons (Haddon 1988, p. 60).

*Space Invaders* had moved out of the arcades and become a cultural phenomenon. It was soon followed by an even bigger commercial success for Atari – *Asteroids*. Prior to its release the design team had to pull fascinated Atari employees off the prototype machines in order to complete work on the game (Hunter 1998). Players used buttons to move a spaceship around an asteroid field, trying to avoid collisions. As the rocks were shot, they broke into smaller and smaller pieces until they were destroyed. Adding to an already intense game was the occasional appearance of an alien flying saucer that attacked the player's spaceship (Hunter 1998).

**Interactive fiction**

The 1960s saw a large number of games developed for computers, many of them distributed freely within an enthusiastic community of students, programmers and hobbyists. Some early games used no computer graphics at all, but were the precursors to an extremely popular game genre – the text adventure.

Developed in 1972 by Gregory Yob, *Hunt the Wumpus* was an early textual maze game (Nelson 1999) widely distributed among the mainframe computer community. Players issued text commands to move through a system of connecting caves, hunting for an elusive creature called the Wumpus. Text descriptions would give clues to the contents of

surrounding caves – it may be a lethal bottomless pit, or a pack of bats, or it could even be the beastly Wumpus itself. The game was popular and widely distributed over the developing computer network known as ARPAnet, the precursor to the Internet (Hunter 1998).

Also in 1972 a computer programmer named Will Crowther developed a cave exploration program that incorporated elements of fantasy gaming (Adams 2002). The game was passed from friend to friend over the fledgling global computer network and installed quietly on countless computers, "resulting in a mysterious yet impressive game program seeming to appear as if by magic" (Adams 2002). In 1976 Donald Woods found a copy of Crowther's early program on a Stanford University computer. He contacted Crowther, and with the originator's blessing he expanded the program into the more complex *Adventure* (Adams 2002). In 1976 Jim Gillogly at the Rand Corporation created a version of the game that would run on the Unix operating system, and it spread like wildfire on the Unix-based computers that were the backbone of the ARPAnet.

*Adventure* enabled players to interact with a fantasy story (Morrison & Morrison 1995, p. 32). Players could explore the virtual world, use objects and solve puzzles by reading text descriptions of the location and action, and entering text commands like "go north", "use torch", or "kill monster". It was the first significant version of an "interactive fiction" (Poole 2000, p. 32), or role-playing game (Friedman 1998).

As *Adventure* became popular, MIT students Dave Lebling, Marc Blank and Bruce Daniels began work on their own text-based puzzle game. Again using the ARPAnet for distribution, *Zork* (a nonsense word used by the programmers) was distributed and developed between 1977 and 1981. Towards the end of the 1970s the rapid growth of the microcomputer market had paved the way for the emergence of home computers as a lucrative and widespread games market. Working under company name Infocom,

the MIT programmers subsequently converted *Zork* into versions for the expanding home computer market. Although limited by the small processing capacity of the early microcomputers, the ported version proved popular for the new TRS-80 and Apple home computers. Infocom became one of the biggest computer games companies in the world, and several *Zork* sequels were produced in the years up to the late 1990s.

However Infocom had been beaten to the home market by another interactive fiction game. While *Zork* was being developed at MIT in 1977, a systems programmer named Scott Adams was working to create a text adventure for the home computer market. In 1978 *Adventureland* was released for the TRS-80 computer and was a success, selling around 10,000 units (Hunter 1998).

By 1980, adventure games began to incorporate simple graphics to enhance the playing experience. In 1980 Ken and Roberta Williams released *Mystery House* for the Apple II, becoming the fist computer game to combine text and graphics. They sold nearly 11,000 copies inside the first year, and subsequently formed the company Sierra On-Line, which became synonymous with adventure computer games through the 1980s (Morrison & Morrison 1995, p. 39). Sierra's graphical adventure *King's Quest* was released in 1984, and sold more than 2.7 million copies (Hunter 1998).

The interactive adventure game made a dramatic comeback in 1993, with the release of *Myst*. Well-designed graphics, video and sound combined with cunning puzzles and an absence of narrative structure produced a significant development in the area of interactive fiction.

**Caught in the Net**

While text-based games like *Adventure* were distracting computer users around the world in the late 1970s, the early forms on online gaming were emerging. In 1979, at Essex University in England, Roy Trubshaw developed the first Multi-User Dungeon (now also referred to as a Multi-User Domain or simply MUD). Like a maze game, the MUD was built around a series of locations or rooms. Multiple users could explore these rooms and interact with a database of objects, and with each other, via text commands (Hunter 1998). Points in the MUD game were earned by killing other players, or by collecting treasure items scattered through the fantasy landscape (Nelson 1999).

The focus on slaying monsters and seeking treasure reflected the popularity of the *Dungeons & Dragons* (*D&D*) role-playing game system. *D&D* was itself based heavily on the fantasy world created by author J.R.R. Tolkien. As the MUDs began to explore more diverse scenarios, the term Dungeon was increasingly replaced by Domain.

The MUD was the precursor to the Internet-connected multiplayer games that are popular today. Many games are today designed with network versions that allow players to compete against or with each other via the Internet. More recently, hundreds of thousands of game players have participated in shared gaming events via Massively Multiplayer Online Games (MMOG), or Massively Multiplayer Online Role Playing Games (MMORPG). These are virtual environments or "worlds" that effectively blend gaming elements such as missions, combat or point scoring with online communication such as chat rooms and forums. Sony Online Entertainment's *Everquest* is handled by 45 computer servers, capable of supporting 430,000 players simultaneously and storing data for four times that many. Sony claims that about 400,000 subscribers currently pay a monthly fee to play the game online (Kushner 2002).

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## APPENDIX 2

### F L O O D ! -- Newswriting exercise

www.rocketonline.com.au/flood

Scenario

You work for a radio station in the town of Lagoon, located in the Central West of New South Wales. After a period of heavy rain and storms, overnight the State Emergency Service has declared a flood emergency for the entire region.

Imagine that you have just arrived at work for the breakfast shift. It is now a little after 6am, and your next local news bulletin is at 7:05.

Task A

Working in pairs, prepare a two minute radio local news bulletin to inform your local listeners of the latest news about the floods. By exploring the website you should be able to find information for several stories covering different angles of the current emergency.

What does your audience want to know in this situation? Consider such things as:

- road closures
- evacuations
- loss of life or property
- is the worst of it over?

Task B

Now that you are a little more familiar with events in Lagoon, each student will write a longer (45 – 60 seconds) radio news story focusing on one major aspect of the flood emergency.

You may include a short piece of interview material ("actuality") in your story based on your interactions with the characters on the website. You should indicate the first and last words of the material and the (estimated) duration in your script, for example:

```
ANDREW HUNTER from Lagoon Ambulance Station says local roads
have been quiet overnight:

IN:   "It's been pretty slow …"
OUT:  "… that's been about it."
DUR: 10 secs
```

Task C

Complete the feedback form and submit it at the end of the class.

## APPENDIX 3

2001 Feedback Sheet

Respondents: 44

"Item 1: Overall, the Website helped me to understand the process of newswriting"

| VSA (7) | SA (6) | A (5) | U (4) | D (3) | SD (2) | VSD (1) | NA (0) | | Mean |
|---|---|---|---|---|---|---|---|---|---|
| 11 | 21 | 12 | 0 | 0 | 0 | 0 | 0 | 44 | 5.98 |

"Item 2: Overall, the Website stimulated my interest in the class exercise"

| VSA (7) | SA (6) | A (5) | U (4) | D (3) | SD (2) | VSD (1) | NA (0) | | Mean |
|---|---|---|---|---|---|---|---|---|---|
| 8 | 22 | 9 | 5 | 0 | 0 | 0 | 0 | 44 | 5.75 |

"Item 3: Overall, the Website was easy to use"

| VSA (7) | SA (6) | A (5) | U (4) | D (3) | SD (2) | VSD (1) | NA (0) | | Mean |
|---|---|---|---|---|---|---|---|---|---|
| 18 | 15 | 7 | 3 | 1 | 0 | 0 | 0 | 44 | 6.05 |

"Item 4: Overall, the Website was well-constructed and worked as expected"

| VSA (7) | SA (6) | A (5) | U (4) | D (3) | SD (2) | VSD (1) | NA (0) | | Mean |
|---|---|---|---|---|---|---|---|---|---|
| 18 | 15 | 11 | 0 | 0 | 0 | 0 | 0 | 44 | 6.16 |

"Item 5: Overall, the Website provided realistic scenarios"

| VSA (7) | SA (6) | A (5) | U (4) | D (3) | SD (2) | VSD (1) | NA (0) | | Mean |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 21 | 8 | 0 | 0 | 0 | 0 | 0 | 44 | 6.16 |

“Item 6: Overall, the Website provided adequate information required to complete the class exercises”

| VSA (7) | SA (6) | A (5) | U (4) | D (3) | SD (2) | VSD (1) | NA (0) | | Mean |
|---|---|---|---|---|---|---|---|---|---|
| 12 | 18 | 13 | 1 | 0 | 0 | 0 | 0 | 44 | 5.93 |

“Item 7: Overall, the Website made good use of available technology”

| VSA (7) | SA (6) | A (5) | U (4) | D (3) | SD (2) | VSD (1) | NA (0) | | Mean |
|---|---|---|---|---|---|---|---|---|---|
| 27 | 13 | 3 | 1 | 0 | 0 | 0 | 0 | 44 | 6.50 |

Item 8: I would like more class exercises like this

| VSA (7) | SA (6) | A (5) | U (4) | D (3) | SD (2) | VSD (1) | NA (0) | | Mean |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 17 | 11 | 1 | 0 | 0 | 0 | 0 | 44 | 6.05 |

**APPENDIX 4**

# F L O O D ! -- Newswriting exercise

www.rocketonline.com.au/flood

**Scenario**
You work for *The Daily Rocket* newspaper in the city of Lagoon, located in the Central West of New South Wales. After a period of heavy rain and storms, overnight the State Emergency Service has declared a flood emergency for the entire region.

It is now a little after 6am, and your editor wants to send a special late edition of the paper to the presses this morning. You have been given a little under two hours as the deadline for your stories. Your first job is to check the police rounds. Phone the Lagoon police station to see what's been happening overnight.

**Stories 1 & 2**

Write two news stories based on your police rounds this morning.

Each story should be 3 – 5 paragraphs long. Remember to summarise the main thrust of a story in the lead paragraph, and prioritise the information .

You may include well-chosen direct quotes in your story based on your interactions with the characters on the website , but do not simply fill out your paragraphs with quotes.

**Story 3**

Your editor tells you there's a press release from the local Health Centre in the fax tray, and it's worth a look for a human interest story about the floods.

Write a 3 – 5 paragraph news story about the services available to people affected by the flooding in Lagoon.

**Photos**

The *Daily Rocket* photographers have been busy documenting events around town. Go to the photo gallery (follow the Camera link) and choose a photograph to illustrate each of your stories. Download a copy of the image to your machine, then Insert → Picture → From File … to include it in your Word document.

**Survey**
Your last task today is to complete a brief feedback survey about this exercise, and submit it at the end of the class.

## Assignment 3

### *Online coverage of a breaking news story*

**Due date:** *Monday, 28 October 2002*

**Value:** *30%*

**Rationale**
The purpose of this assignment is to:

- practice news gathering techniques;
- practice online research techniques;
- apply online source assessment techniques; and
- practice online news writing techniques.

### Background to task

This exercise requires you to access and explore a Web-based newsgathering scenario at:

http://www.rocketonline.com.au/flood/

Imagine that you work for a newspaper in the fictional town of Lagoon, located in the Central West of New South Wales. Like many media organizations your employer – *The Lagoon Daily Rocket* – is developing an online news presence.

Your job as an Online Content Producer is to provide material for the Daily Rocket's website – known as *Rocket Online*.

After a period of heavy rain and storms, overnight the State Emergency Service has declared a flood emergency for the entire region. You have just arrived at work for the morning shift. It is now a little after 6am.

By exploring the website you should be able to find information for several stories covering different angles of the current emergency.

Use the Website to gather information about stories and to "interview" local people.

You have access to the news wire service, which provides generic news items to subscribing organizations around the nation. You also have a fax machine and a telephone directory (click on the telephone numbers to "dial" a number). There are maps of the town and the region. A staff photographer has also taken some photographs overnight and this morning.

What does your audience want to know in this situation? Consider such things as:

- road closures
- evacuations
- loss of life or property
- is the worst of it over?

## Task

Produce a mini Website covering the Lagoon flood. Your site must contain at least:

1 main story (250 – 350 words maximum)
2 related smaller stories (150 words each maximum)

You may use images provided on the website, or sourced yourself.
You may quote the text supplied as dialogue for the "characters" you encounter on the scenario Website, but make sure that your story is not all quotations.
Each story should have an appropriate headline, and be written in a style suitable for the Web using the relevant principles covered in this subject.

Include a total of at least 10 external links in your stories to relevant online resources. Remember to make an assessment of the quality/validity/relevance of the references you choose to include as links. These may include:

- related weather resources;
- specific centres devoted to this type of disaster;
- emergency or rescue agencies;
- timelines, histories of interesting facts about previous weather disasters of this type;
- online visuals (maps, photographs, graphics, video, animations); and/or
- anything you can think of that would be suitable.

For assessment purposes - if you do not include the Web address (URL) of a hypertext link in your actual story, include all URLs as a separate listing included with your assignment.

*For example*,
Your story includes dummy links to Web sites:
"The Australian Bureau of Meteorology has more information about how to cope with severe flooding."

You should then include a listing at the end that indicates the link and the full Web address:
Bureau of Meteorology – http://www.bom.gov.au
severe flooding - http://www.bom.gov.au/hydro/flood/flooding.shtml

**Presentation of your assignment:**

- You may submit your assignment as a hard copy print out of a word processed or desktop published documents. Use layout tools to present the information as you would like it to appear on the Web. Include individual stories as separate pages. Indicate text that would be a hypertext link by using underlining – or some other obvious means. Don't forget to include a separate page listing full Web addresses for links included in your stories.

- If you design your assignment as working Web pages using an HTML editor, submit a hard copy print out of the pages as viewed in a Web browser (eg Internet Explorer). Include individual stories as separate pages. Indicate text that would be a hypertext link by using underlining – or some other obvious means. Don't forget to include a separate page listing full Web addresses for links included in your stories.

- You may also submit your assignment electronically in Microsoft Word or Rich Text Format via the EASTS system (see assignment submission section in this subject outline). Include individual stories as separate pages of a single document. Indicate text that would be a hypertext link by using underlining and a different font colour – or some other obvious means. Any graphical elements (eg pictures) should be embedded in the Word or RTF file. Don't forget to include a separate page listing full Web addresses for links included in your stories.

## APPENDIX 6

# INSTRUCTIONS FOR ACCESSING CD-ROM ATTACHMENT

The files contained on the accompanying CD-ROM are intended for Windows or Macintosh compuers.

A version 4 Web browser (or higher) and a screen resolution of 1024 x 768 are recommended. While most of the package can be viewed offline, some elements require a working Internet connection.

**If the opening Web page does not start up automatically when you insert the CD into your computer, then perform the following steps:**

### *Windows*

1. Double-click **My Computer** on your desktop.
2. Right-click the **CD Drive** and **OPEN** form the pop-up menu.
3. Double-click the file called **start.html**


### *Macintosh*

1. Double-click the CD's icon on your desktop
2. Double-click the file called **start.html**