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Drama and technology: Teacher attitudes and perceptions

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**DRAMA AND TECHNOLOGY:
TEACHER ATTITUDES AND PERCEPTIONS**

BY

KIM FLINTOFF

B.A. (Theatre and Drama), Grad Dip Ed (Secondary Drama)

A Thesis Submitted in Partial Fulfillment of the Requirements for the Award

MASTER OF EDUCATION

At the

School of Education

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2005

USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

Abstract

Educational systems are continuing to prioritise the importance of technology in learning. Curriculum guidelines and frameworks from across the globe insist that all learning areas find ways to utilise appropriate technologies in the teaching learning process. Drama Education is one area where the use of technology seems to be quite limited.

The study seeks to determine some emerging understanding of the perceptions and attitudes held by Drama teachers about the introduction of Interactive and Information Technology (Digital Environments) into classroom Drama practice. Of particular interest to this researcher is the seeming reluctance to engage with such technology.

Drama educators from all levels of education were invited to complete the survey via email and the *Drama Education: A Global Perspective* website will contribute to the study.

Since the study functions in an essentially interpretive and descriptive mode it was not expected that generalisations will be forthcoming, although there do emerge some relational understandings as well as implications and considerations for future introduction of so-called digital environments in Drama, and related issues such as resourcing, professional development, and pre-service training. Additionally, this study identifies areas of need and/or deficiency within school structures in relation to technology access and requirements for Drama educators. This is especially relevant to the Western Australian context as education sectors are engaged in curriculum improvement programs that necessitate cross-curricula and integrated practices.

Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

- (i) incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education.
- (ii) contain any material previously published or written by another person except where due reference is made in the text; or
- (iii) contain any defamatory material.

I also grant permission for the Library at Edith Cowan University to make duplicate copies of my thesis as required.

Kim Stephen Flintoff

Signature:

Date:

Supervisor: Tarquam McKenna

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Definitions

The following terms were used in the survey questions and will be used throughout this paper.

Cyberspace. “A general term for any or all electronic “space”, or the virtual space of bits and bytes as opposed to the physical space of atoms and molecules. The term comes from William Gibson’s 1984 novel *Neuromancer*, where it refers to a vast electronic matrix of data controlled by powerful corporate entities” (Holeton, 1998 p. 436).

Digital Environment. An environment where a person interacts in Cyberspace. The intention when creating the initial survey was that this phrase might be interpreted as “*any computer-mediated communication system*”¹.

Drama Class. In the survey when a question related to the respondent’s particular teaching situation the term “drama class” was used.

Drama Education. The survey made no distinction between the various pedagogical approaches to Drama Education.

Learning Technologies. This seems to be a general term being adopted by educational sectors to refer to computers used in the process of teaching and learning.

Learning Area. This is the term that is commonly used to refer to subject areas, in earlier times the term “faculty” or “department” may have been used. *The Western Australian Curriculum Framework* (Curriculum Council of Western Australia, 1998) identifies 8 Learning Areas – The Arts, English, Languages other than English, Technology and Enterprise, Mathematics, Science, Health and Physical Education, and Society and Environment.

¹ This phrase was used in the referral page at the Drama Education: A Global Perspective (<http://members.iinet.net.au/~kimbo2>)

Chapter 1: Introduction

As more teachers and schools begin to incorporate *learning technologies*, information technology, and especially the Internet into classroom practice it seems that Drama teachers are left to find how they will adapt to the changing requirements of curriculum and to find effective ways to incorporate such technologies into Drama Education.

Background

This researcher has been involved in the exploration of potential uses of computers in Drama education for approximately 8 years and has witnessed what seems to a general unwillingness amongst Drama teachers to seriously adopt a wide range of technologies into their practice. He further believes that the uses of technology in Drama education have not been adequately explored and as such Drama teachers have few models from which to develop their own practice. There is also the belief that as a result of a changing paradigm in Drama education, education systems and professional development providers (including pre-service training) may be overlooking the resource requirements and the requisite skilling of teachers in this area.

Discussion

The following material is an expanded and modified version of material excerpted from several articles I have written over the past few years [See (Flintoff, 2002a, 2002b, 2002c, 2003)].

In discussing the role of “The Arts” in education, the Western Australian Curriculum Framework asserts that Drama, as one of the “arts” subjects in schools, is to *“contribute to the development of an understanding of the physical, emotional, intellectual, aesthetic, social, moral and spiritual dimensions of human experience”*

(Curriculum Council of Western Australia, 1998 p. 50). Further if drama is to “*assist the expression and identity of individuals and groups through the recording and sharing of experiences and imagination*” (Curriculum Council of Western Australia, 1998 p.50), it seems obvious that any use of technology should be supporting these outcomes.

The Western Australian Curriculum Framework indicates in relation to Arts education that there is a general need to find adaptive approaches to learning and specifically refers to the use of computers. This inference is drawn from the following passages from the Framework;

- *They [students] need to be encouraged to question existing practices and conventions and to value innovation* (Curriculum Council of Western Australia, 1998 p.69).

And as such the emergence of new environments in which to enact arts activities must offer up existing practices and conventions to be questioned and evaluated.

- *Students need programs that challenge them to move on: to use more challenging arts ideas, work in a new genre, style or form; develop control of a new skill, technique or process; or respond to an arts work that uses unfamiliar conventions. They need the challenge of exploring a broader diversity of arts works from different times and places, comparing them, analysing and categorising them, seeing relationships and evaluating them. They are more likely to learn if existing understandings are questioned and reflected on in creative and supportive ways* (Curriculum Council of Western Australia, 1998 p.70).

Engaging in arts activities utilising emergent technologies, technologies that are redefining our perceptions of the world and our place in it, provides unprecedented opportunities to question and reflect upon our existing understandings. This suggests that it becomes incumbent upon Drama teachers to find ways in which technology

can provide the new genres, styles and forms referred to here. Likewise, engaging in Drama in cyberspace provides unfamiliar conventions and it has been suggested that it might also provoke existing ones. To begin with, physical laws need not apply, bodies and voices are optional, gender is not fixed, and space becomes one of the elements we construct rather than simply that in which we work. This is one sure way to extend and diversify the scope of Arts, and specifically Drama, practice.

- *Students have ready access to arts equipment such as paints, **computers** [emphasis added], dress-up boxes, puppets, masks, tuned and untuned percussion instruments and cameras (Curriculum Council of Western Australia, 1998 p. 70).*

If computers are to be considered as “arts equipment” then teachers are challenged to find ways of incorporating them in the actual process of producing art works. This incorporation should probably extend beyond mundane mechanical and reproduction opportunities. This passage from the Framework suggests that students should be able to access computers should they find the need.

- *Students with disabilities should be provided with appropriate alternative ways of demonstrating the outcomes of arts programs: for example, they may need computers with appropriate software (Curriculum Council of Western Australia, 1998 p. 71).*

In an atmosphere of inclusive education this statement presumably refers to the special needs of **all** students. As cyberspace, virtual domains and other learning technologies emerge as significant players in our society, educational systems must provide opportunities at school for students to explore its possibilities and ramifications in **all** learning areas.

Considering the implications suggested by the Framework, it is deemed necessary to incorporate technology in all learning areas; as such it becomes important to identify any obstacles or impediments to this implementation.

Jonathan Neelands in concluding “*Part 3 – Student and teacher perspectives*” of his report “*Drama and IT*” asserts the importance of incorporating IT in Drama, from the point of view of inclusivity:

It would seem that we run the risk of closing the door on some pupils unless we add the I.T. dimension to our day-to-day drama work (Neelands, 1993 p. 55).

This risk seems to stem from the need to accommodate a wide range of learning styles and providing opportunities to address limitations to learning that may be present for some students in traditional learning environments. I wonder for instance how a person such as Steven Hawking, with his reliance on sophisticated communications hardware and software would be able to participate in Drama. It is possible that certain learning disabilities, and social limitations may be addressed by the implementation of technology. I would suggest that I am not the only Drama teacher to have experienced the phenomenon of the student in the class who is very keen to operate all the theatrical technology (sound, lights, special effects) but is very reluctant to participate “on the floor” by engaging in drama activities. Allowing new paradigms for engagement, such as computer games, online chat rooms, and similar technologies may prove to be useful to scaffold the participation of such students.

Scope

This study seeks to identify some emerging perceptions and attitudes held by Drama educators towards the introduction of technology into Drama Education. The researcher has a long association with the broader global community of Drama educators and has experienced frequent questioning of the need to engage with technology. The study seeks to establish some understanding of these attitudes on a

broad scale. It is hoped that this preliminary study will point towards future localised in Western Australia and more specific investigations into the nexus between IT and Drama Education.

As there seem to be few investigations into whether or not technology is beneficial to Drama education, it is beyond the scope of this study to examine if Drama teachers should or should not be using technology. There are systemic imperatives to begin engaging with the introduction of technology, but there is little evidence to be found that this is a positive thing to do.

While I as researcher believe that there are some benefits to be found, I acknowledge that there may be equally valid arguments suggesting that technology may be anathema to Drama education, indeed it may even prove to undermine the very nature of Drama education. There does not appear to be readily available information to support or deny either assertion.

Chapter 2: Purpose/Research Questions

The purpose of this study is to identify and describe the attitudes of a random group of Drama educators towards the use of “digital environments” in Drama education. This includes their attitudes towards their own preparedness, access to resources and overall importance of the use of technology in Drama education.

The initial proposition is **that Drama teachers are not readily utilising new technologies and further that they do not value the introduction of such technologies.**

Research Objectives

The study seeks to :

1. Identify if Drama educators have considered the use of “digital environments” in Drama classes.
2. Determine if this group of teachers have actually attempted the use of “digital environments” in their own practice.
3. Measure attitudes towards the importance of “digital environments” in Drama classes.
4. Measure subjective perceptions of teacher preparedness to use “digital environments” in Drama classes including skills, knowledge and resources.
5. Determine attitudes of Drama teachers towards the use of computers and other technologies in Drama education.
6. Summarise and discuss any considerations for Drama teachers that emerge from this study in relation to Drama education and *learning technologies*.

Chapter 3: Literature Review

Defining the scope of Drama Education

Drama is defined in a variety of ways as both a body of knowledge and a way of knowing, teaching and learning.

In the educational field, drama is generally seen both as a method of teaching-learning across the curriculum and as a body of knowledge in its own right (Cusworth and Simons, 1997 p.7).

Throughout the world this is expressed in many ways. The scope of what constitutes Drama is broad and in different countries Drama educators conceive of the subject in a variety of ways. Gears (2003) discusses the three dimensions of “drama education” that he has identified within the British education systems:

The present education system has, in the main, three types of drama, each excellently taught and vitally important for our young people.

1. Theatre Studies enables students to develop knowledge and skills to express ideas and communicate artistically in a medium; this is increasingly linked to employment in the growing ‘cultural industries’.

2. Drama-in-Education methods facilitate the teaching and learning of a diverse range of subjects.

3. Drama-in-Education as an independent subject promotes a holistic issue-based education through the means of drama, with more emphasis on process than product (Gears, 2003).

The basic distinctions made by Gears are that drama is a pedagogical form, a body of knowledge unto itself and the theory and practice of creating theatre. Each approach positions learners differently and has a different focus on the content and outcomes expected.

One way of framing this scope is to suggest that there is a Theatre-Drama continuum. The following graphic might represent this:



Figure 1: Theatre-Drama Continuum

There has been a great deal of debate over the years, including a famous exchange between Gavin Bolton and David Hornbrook about the nature and practice of Drama Education. Bolton (2000) has recently written:

It is all theatre, but for anyone to recommend an immediate change of usage would be absurd, for there are too many branches of education that still rely on alternative expressions to make it clear to others that what they are doing is something other than or bigger than putting on plays (Bolton, 2000 p.27).

And further...

All drama courses, all drama activities, will be seen as practicing one or more theatrical genres (Bolton, 2000 p. 28).

Additionally Drama is used at all levels of education from pre-school and kindergarten through to university and beyond. Whilst it is not the purpose of this investigation to make any significant distinctions between educational sectors and

pedagogical approaches to Drama it is useful to identify the major distinctions and strategies utilised in Drama to help frame the differences between it and other subject areas.

In discussing this diversity of approach in Drama as an educational method *Bowell and Heap* (2001) choose to use the metaphor of a helix to describe the nexus between learning *in* and *through* Drama.

A helix is a good model to explain what we mean. In fact, it has often been used in the past by other practitioners to illustrate the relationship between form and content. It demonstrates quite graphically that the two strands of learning are always there, entwined together. Although one may be in sharper focus than the other at any given moment the other is always present (*Bowell and Heap, 2001 p. 4*).

Neelands further breaks this distinction into three strands that combine to explain the scope of Drama education.

It assumes for instance, that a specialist will provide three dimensions of drama in the school: as a curriculum subject; as extra-curricular activity and as community performance (*Neelands, 1990 p. vii*).

Neelands aligns with *Gears* in drawing a distinction between the idea of Drama as a subject and Drama as an extension/expression of theatre practice. Although not reflected in this quote, *Neelands* is well known for his engagement in process-oriented drama.

Drama is inextricably linked to theatre and performance and is often discussed in terms of “imagined experience”; it draws heavily on the notion of engagement in role, given circumstances (acting as if fictional circumstances are real) and identification with the fictional experience. Additionally Drama is concerned with

the functional activities of **making, presenting** and **responding**, terms used by Wright (2003) to describe arts education processes. It is important to understand these concepts in order to see how Drama education differs from other forms and areas of learning.

Bolton (1984) explains the function of “role” as a central notion in dramatic activity as follows:

*A participant in a game adopts a role based on his conception of others’ roles, what George Herbert Mead (1934) calls the ‘generalised order’: a child cannot play hide-and-seek unless in ‘hiding’ he understands the function of the ‘seeker’. His role exists only in terms of the other roles in the game. As Lawrence Stenhouse (1981) puts it, there has to be a **mutuality**. This is true of role in a game and role in the ‘game’ of drama (Bolton, 1984 p.100).*

He expands on this and explains that role is not so much *pretending* to be someone else but rather the child (or learner) in drama *responding* to the fictional or given circumstances as themselves.

The view of acting behaviour as no more than role function has taken us a long time to understand. Most drama books write of children ‘playing a part’, ‘playing someone else’, ‘taking on a character’, whereas what is required of children in drama (or at least, in the dramatic playing mode) is that they be themselves, functioning in whatever way the situation demands of them...In drama, of course, the range and subtleties of roles are far greater than in games or in life (Bolton, 1984 p. 101).

It is this aspect of role that seems to be reflected in many types of online interaction. This was one of the key characteristics that were in my thinking when beginning my investigations into Drama and Technology. In an earlier paper:

I became intrigued by the possibilities and began searching the Internet and started to discover that a few people were wrestling with ideas. I read Sherry Turkle's "Life on the Screen" in an attempt to draw some connections between life roles, assumed persona in virtual environments, constructed persona and dramatic role-play. This area still remains enormously complex and contentious (Flintoff, 2002c p.190).

It is still my belief that the exploration of online communication "in role" offers a great deal to Drama Education and is yet to be recognised widely by Drama educators. And as I have previously stated the opportunities that are offered by new and emerging technologies may serve to enhance the core work of Drama educators:

In considering these missed opportunities I am reminded of a statement by Esther Dyson (Dyson, 1996), who was reported as saying that "the most effective users of "cyberspace" are those who can conceive of and act as though it were a performance and space" (Dyson, 1996 pp. 81-90) . I find it hard to ignore the parallel that this statement could also be true of students and teachers of drama. If, as many Drama educators believe, "Role is the central skill of drama. It is the process of pretending to be another person. For educational drama to occur students must be negotiated in the enactment of another person's viewpoint in a fictional world. Drama requires the ability to step into another's world view." Then surely the virtual world of MUDs, MOOs, 3D worlds, VR, IRC and other "chat" technologies offers unprecedented opportunities to explore the possibilities of role (Flintoff, 2002c p. 191).

Finally, Courtney asserts that "identification"

implies the internalising of the values of the model; it implies an emotional relationship between the imitator and the imitatee so that value patterns are shared (Courtney, 1974 p. 222).

Since the respondents to the survey in this study are working in many countries and educational sectors across the globe it is necessary to recognise that their responses will reflect the way they frame Drama Education. At this stage of the study it is not deemed important to make these distinctions. Further studies may seek to investigate the differences in perceived importance and perhaps efficacy of technology for drama education.

Teacher attitudes (in general population) towards technology use

The shift to incorporate learning technologies in education has undergone a huge acceleration in recent years. This is probably due to many factors including the significant shifts in the adoption of technology by entertainment and business sectors. Everyday life has been influenced, at least in relatively affluent nations and arguably across the globe regardless of economic development, by the increased usage of Internet technology, personal computers, PDA, mobile communications technology, digital entertainment and digital gaming. It is reasonable to assume that education systems must reflect the uptake of these technologies and cater for learning that will meet the needs of emerging digital economies.

There are numerous studies (Krysa 1998, Solomon 1998, Smith 1983, North 1994, Lankshear *et al* 2000, Dawes and Leask 1999) that have examined overall attitudes of teachers towards the inclusion of technology competencies in curriculum and administrative aspects of their work. Curriculum documents such as the *Western Australian Curriculum Framework* (Curriculum Council of Western Australia, 1998) and anecdotal reports from colleagues suggest that teachers in many educational systems around the world are required to include the use of technology as part of their core curriculum and are increasingly required to utilise technology in teaching-learning processes.

The Milken Exchange on Education Technology conducted one significant study into teacher attitudes. In a report entitled “*Progress of Technology in the Schools: Report on 21 States*” (Solomon, 1998), which conducted a broad and detailed survey of the many dimensions of the implementation of technology in school, it is suggested there is a strong correlation between effective implementation and teacher attitude. The table below indicates one dimension of the survey relating to teacher attitudes about the importance of technology in education.

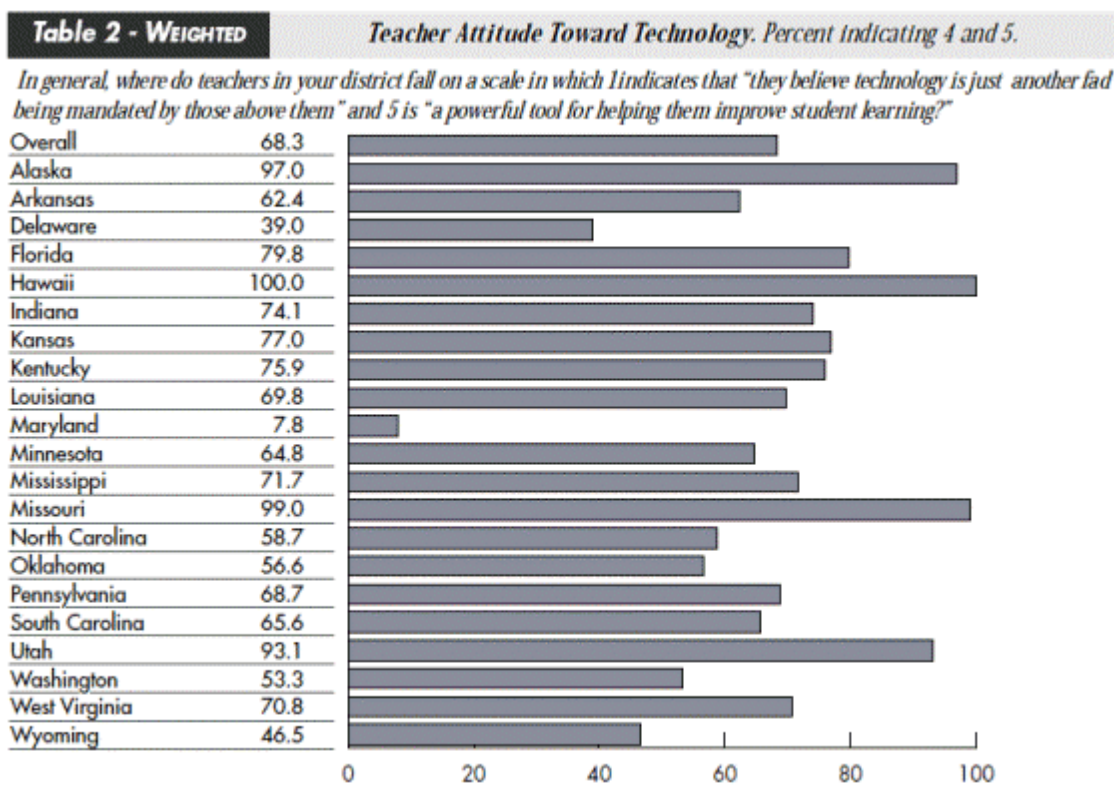


Figure 2: Teacher attitudes from Milken Exchange study (Solomon, 1998)

This figure indicates that in the vast majority of the states surveyed that there was a strong agreement by teachers that technology is an important inclusion in the teaching-learning process. According to this table 18 of the 21 schools surveyed indicated that more than 50% of teachers ranked the role of technology as

“Important” or “Very Important”. However, the survey makes no indication as to finer distinctions between teachers in different Learning Areas.

Krysa (1998), also contributes a literature review as a generic examination addressing implementing technology within educational contexts without specific reference to subject area, and concludes:

In summary, the framework for the review is based on frequently recurring factors affecting the implementation of computers identified by Roszell (1995). Eight frequently occurring factors that act as potential barriers against the implementation of computers by teachers have been reviewed in the literature:

- *time factors*
- *availability of hardware*
- *software issues*
- *attitudes of administrators,*
- *pedagogical issue*
- *teacher attitudes*
- *personal familiarity with computers*
- *teacher training* (Krysa, 1998).

Educational sectors around the world are beginning to identify teacher competencies required for effective implementation of technology. The Milken study mentioned previously identified many elements that influence the effective use of technology in schools; these included such things as system-wide plans for implementation, professional development, ongoing training, pre-service training, availability of resources, access to resources, appropriateness of software and hardware componentry, and of course, most relevant to this study, teacher attitude. These dimensions are reflected in other contexts, such as the ICT Self-Audit (Dawes, 1999)

where 19 dimensions of teacher competency were applied to a self-assessment tool for teachers to determine their state of preparedness to utilise technology. The current attitudinal study is more concerned with current perceptions amongst Drama educators specifically, and seeks to gain a broad overview rather than a detailed portrait of the current state of play.

There are many ways to consider the adoption and implementation of technology in schools. It is important to recognise that there is a conceptual model being applied to the current investigation and that is drawn from a “Technology acceptance model” reported by Cox (Cox, 1999) and approximates the following figure:

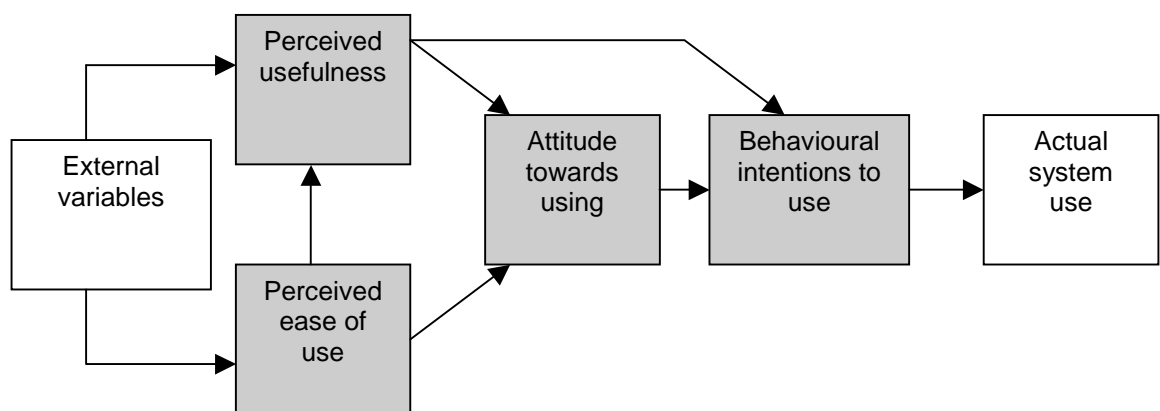


Figure 3: Conceptual Model of Technology Acceptance based on Cox (1999)

This model is based on a study conducted amongst a group of adult technology users of a managerial system. For the purposes of the current study it has been assumed that there is sufficient generalisability of the concept. This assumption is also based on several elements discussed in the Milken Exchange study mentioned earlier as well as the following five principles described by Lankshear and Snyder:

We see five principles as particularly useful to guide the effective integration of new technologies into classroom-based literacy education. They are also useful to guide curriculum activity more broadly. We call these principles:

- *teachers first;*
- *complementarity;*
- *workability;*
- *equity;*
- *focus on trajectories* (Lankshear, 2000 p. 120).

The survey applied in this current investigation seeks to identify broad trends in the areas shaded in the conceptual model above. That is to say that the study focuses on issues affecting actual use and does not overly concern itself with the nature of any implementation within a classroom or other teaching context. However, it is possible to speculate on the role of Drama teachers and how their expertise might be positioned in future contexts as show in Figure 4.



Figure 4: The place of Drama Teachers in the future?

Types of educational technology

There is a wide range of educational or *learning technologies* that can be utilised across the curriculum. These include the types of technology closely aligned to business and vocational undertakings, such as word processing, spreadsheets and databases, graphics/audio/video applications, as well as a wide range of interactive

games and communications technologies. The Internet is capable of providing access to any or all of these technologies and expands the potential through its networked capacity.

Associate Professor Brad Haseman in discussing the key concerns of designing and implementing a modern and relevant Drama curriculum speaks positively of the possibilities and actualities of contemporary drama practice, and thereby Drama education;

The play can be seen as the root property, to be re-versioned for different audiences and different media. And the performance of the play can be more than just that. It can use the enabling technologies of a digital environment to connect with larger and technically savvy audiences everywhere.

To understand drama's role in contemporary society requires students and teachers to begin thinking in these directions. It challenges student playwrights and dramaturges to wrestle with the ways dramatic narrative may be re-purposed from the school hall to the computer game. It also gives drama teachers and their courses the opportunity to connect with the ICT strategy of the school and the wider community (Haseman, 2002 p. 127).

Traditional curriculum generally deals with two aspects of Information Technology, i.e. the **use** of applications and the **creation** of new software/applications, seldom does it appear to investigate the educational and cultural aspects cyberspace. Online learning environments are being used more often, yet most seem to be trying to replicate a traditional transmission model of teacher and student relationships. Jonathan Neelands (1993) proposed that I.T. can be utilised in two dimensions - *within* and *outside* the drama. These largely focus on using technology while engaging in (*within*) and in preparation for (*outside*) drama activities and lessons.

I have speculated in previous writing about the potential opportunities in Drama education to engage with a wide range of technology and have expanded the Neelands two contexts to five (5) contexts. The following material is extracted from a paper “*Stepping into the virtual - is Virtuality a contemporary alternative to Drama?*”(Flintoff, 2003 pp. 136-140) originally presented at the 4th IDEA World Congress in Norway.

These new contexts begin to make distinctions between the possible *outside* applications and those *within*. There is also speculation about the addition of a new dimension to the role of technology in Drama education by proposing that the development of “cyberspace” allows for a new environment in which drama activities can take place.

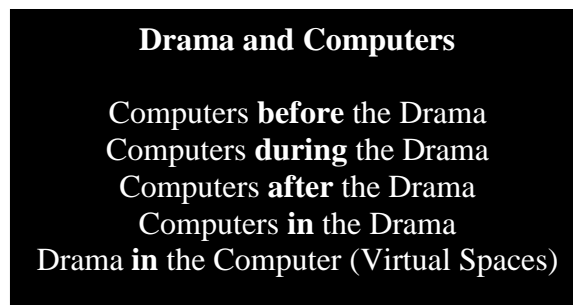


Figure 5: Opportunities to utilise technology

Computers *before* the Drama

There are a range of ways that computers can be used **before** the Drama, that is to say in the planning or creating stage of dramatic process. These uses tend to be at the more mundane level of engagement, but nonetheless offer novel and interesting ways of approaching traditional practice.

- Computers can be used to research a given subject, topic or issue before students engage with a “dramatic” exploration; CDROM, Internet, eBooks and other information sources can be utilised.

- Word processors can be used in a variety of ways to compile and develop scripted scenes.
- Computer Assisted Design (CAD) packages, 2D/3D graphics applications can be used to generate settings, virtual locales, virtual characters. This can extend to VRML representations of sets and characters – directors and actors are able to negotiate the intricacies of a set, explore lighting and blocking possibilities before it is constructed in real space. Some excellent work has been conducted in this area by practitioners at the Institute for the Exploration of Virtual Reality²
- Project management software can be used to track and plan development of devised work, scripted productions and other performance related aspects of drama and theatre work.
- A range of PIM (personal information managers), digital diaries and journal software can be used to map expectations and goals.
- Students can engage in role-playing games (RPG) or simulations such as *The Sims* game in order to develop drama activities that explore character, narrative, situation, etc.
- Computers (and peripherals) can be used as alternate delivery systems to traditional non-digital means, for example, digital projection, MP3 music files, digital photo albums, multi-media and web pages can be used to deliver a range of stimuli to promote engagement with dramatic process. One good example of this was demonstrated by Paul Sutton and the C&T company with their “Adverb (CAMPBAT) Project”³ where the notion of surveillance and resistance was explored through video and text delivered via the internet.

² This is a Virtual Reality research unit embedded in a Theatre and Drama faculty
<http://kuhttp.cc.ukans.edu/~mreaney/>

³ Initially a Theatre-in-education company at Worcester – now investigating a range of Drama activities including technology mediated approaches. C&T were invited by me to present this project at the SIG in Norway. <http://www.worc.ac.uk/candt/candt/>

Computers *during* the Drama

Computers can be used during Drama engagement in a variety of ways. Some are quite common and we seldom think twice about, others are more recent developments that may not have been explored by many practitioners and students.

- Computers are regularly used in the control of audio, lighting, multimedia and special effects elements of theatrical performance.
- Stimulating or advancing action/plot – computers can be used to deliver stimulus material during the development or presentation of drama (either prepared or improvised). In this way the introduction of extraneous material, music, images, video, computer generated “characters”, actors in other locations, sounds, text, etc can influence and modify the journey through the dramatic process. The introduction of apparent (or actual) random elements can add new and unexpected dimensions to the way students and other practitioners participate in dramatic activity. It is also possible that these elements can be used to modify the audience engagement with any presentation – experiments have been tried using such devices as “head-up” visors to merge real and virtual elements of performance.
- Computers can moderate the pace – the following example was presented during the SIG and describes the development of an improvised fictional drama mediated by computer interaction.

... armed with minimal knowledge and a decrepit old Amiga 500, some simple text animation software, a music composition program, a candle and a lot of wishful thinking I developed the presentation/workshop with my study partner. We drew upon one of the ideas in Drama and IT; adapting as best we could given the very different circumstances. We used the computer to construct a scenario of messages coming from the future warning us about an impending disaster. With our peers functioning as

our students we conducted the session, tapping into rhythmic movement, ritualised patterns of behaviour, role play, improvisation and story-telling to engage in a Drama that eventually saved the planet – all the while having our progress and discoveries mediated by a computer program.

Computers *after* the Drama

In similar fashion to the “**before**” uses some opportunities here may seem simple alternatives to existing practice.

- Reflective tool – journals and diaries can be used in digital form to reflect upon process – they allow the inclusion of hypertext, digital visual and audio elements that are not normally seen in traditional journals.
- Compilation/archiving tool – computers can be included in the process of compiling and archiving all manner of artefacts – sound bites, video clips, still images, text or a variety of blended forms using multimedia, hypertext or presentation tools.
- Internet Relay Chat (IRC), ICQ, NetMeeting and other chat room or “messenger” style software can be used to engage in discussion and reflection after the practical drama process. (These forms might also be used **during** dramatic activity.)

Computers *in* the Drama

Like any other physical item, computers can be brought into the drama space, they can become an integral part of the “playing”, and this can occur in the following ways:

- As prop – simply use a computer as a computer – something most practitioners have probably done at some stage.

- As character – by using the new generations of animation, choreography and graphics software, and “*intelligent agent*” or “*bot*” software (as well as many simpler applications such as text editors, word processors, chat rooms, etc) it is possible to engage with computers as characters within a drama. The machine itself can be a character as we have seen in film for many years, remember HAL from *2001: A Space Odyssey*? But in this era we are able to create characters that look and sound like anything we wish – we can produce cartoon versions of ourselves, original human-like figures that may interact in pre-programmed, random or seemingly intelligent ways.
- As other – we can still use computers as the “magical” components of a drama – we can use software and projection (audio and visual) to modify audience perception and actor engagement through shifting mood, atmosphere, and other dramatic elements mediated by a computer.

Drama *in* the Computer (Virtual Spaces)

This seems to be the area that most concerns Drama practitioners and yet is also the area that has likely not been explored to its fullest extent. It causes us to ask questions about the very nature of our subject. What happens to drama when it is removed from the physical and temporal – does Drama still happen if it can somehow occur independent of the here and now? As Drama practitioners we are forced into confronting some fundamental and almost metaphysical dilemmas, such as **what is the value of physical presence?** What happens to Drama if it is transformed to textual interaction via an electronic interface?

It challenges us to discover the degrees of virtuality – what’s practical, what’s possible? What have we left to discover? What elements would need to be present in an interface that does help us to relate? What are the elements of Drama as found in cyberspace – beyond the interface, what else is present? To what extent can Virtual Reality be considered “incomplete” compared to Real Life?

Drama explorations and performances can be enacted in virtual environments;

- Textually – via such forms as email, IRC (chatroom), ICQ, MUD (Multi User Dungeons), MOO (Multi-user Object Oriented environment).
- Graphically – environments such as Palace (<http://www.palacetools.com>), AlphaWorld, Blaxxun 3D communities – where combinations of text, avatars and sound effects can be used to interact in real time.
- Virtual immersion – there are various degrees of immersion, from simple 3D virtual worlds across computer screen interface, to VR clothing and headset technologies, to such projects as Placeholder at MIT where unencumbered virtual reality is simulated in a sophisticated manipulation of sensory stimuli.
- Virtually represented characters (or *intelligent agents*) – it is possible for actors to reduce their virtual presence to text, 2D avatar graphics, realtime or pre-programmed 3D motion capture – the body can be reduced to electronic representation – it can vanish into the virtual ether and be re-presented in a totally digitally reconstructed form and it can include all aspects, body, voice, movement, gesture and expression (Flintoff, 2003).

Technology in Theatre/Drama Education

There seem to be many investigations into the application of technology in Theatre and Drama, but few seem to be specifically related to Drama Education. Despite such prophetic and speculative statements as:

We are at a liminal moment in drama education. This is the point where the old structures of culture and identity are breaking down and new ones have yet to be created. It is a time of opportunity for drama as we see new cultural symbols and meanings emerge from the creative synthesis of convergent technologies and social practice (Carroll, 1996 p. 7).

There still appears to be a dearth of investigations into specific applications of technology within the context of Drama education. There are numerous investigations and experiments in the more general field of Theatre and Drama but few in an educational context. In an earlier paper I wrote:

The range of titles and studies cover an enormous range of considerations. It is not surprising that some teachers have difficulty finding relevance for Drama education when the scope of technological based concerns covers such things as:

- *Dramatic representations of science/technology in present-day life*
- *Ethical issues arising from the use of science/technology*
- *Science dystopias; the Frankenstein and other myths*
- *The theatrical body as cyborg - The body in the space of technology*
- *Technology in culture and gender representation*
- *Technological requirements in contemporary staging (Digital Scenography, Televisual mise-en-scene, Hypertextual-Interactive Access etc)*
- *The technologized stage and its consequences for the art of representation*
- *Illusion, reality, virtuality in the new conception of dramatic character and its (re)presentation(s)*
- *The dominance of the televisual*
- *Stage machinery and the promotion of the spectacular in drama*
- *Mediated/Televisual Performance, Digital Art*
- *Computer Modeling*

Not surprisingly, some teachers expressed a concern that they felt overwhelmed and bewildered at the array of technology oriented books and studies and sought fruitlessly for material specifically related to Drama education. And to date there is still a dearth of this type of material. Entry-level material seems to be in short supply yet the scope of investigations

globally is enormous, with many projects well beyond the reach of even the most forward-thinking and well-resourced school Arts faculty. Even Australian universities are struggling to provide resources to research programs in this area (Flintoff, 2002a p. 9).

This current investigation seeks to establish some evidence to test the validity of and to challenge or support these earlier speculative assertions, and hopefully prompt further inquiry and experimentation within the field.

It is interesting to note that in a study by Tony Millett (Millett, 1996) looking at the predicted and preferred changes in drama education between 1996 and 2010 there was a statistical indication that Drama educators recognised that use of technology was likely to become increasingly prevalent in Drama learning but expressed a preference that it did not:

Low Prediction and Low Preference Item	Prediction		Preference		Difference d
	Mean	Rank	Mean	Rank	
Students will use computer applications such as the World Wide Net and Virtual Reality to study Drama	4.03	4	3.30	29	0.62

Table 1: Comparison of Prediction v Preference values [source (Millett, 1996 p. 83)]

In many ways this seems to be at the crux of this current investigation. While the use of such technologies seems to be more pronounced across the curriculum there still appears to a reluctance to adopt the technologies within Drama education. This item alone might well explain the current situation. Could it be possible that Drama educators simply prefer not to engage with technology? It is hoped that the survey might shed some light on this matter.

In his article “*Tradition Under Siege? New Challenges for the Drama Teacher*”, Klaus Thestrup (2003) reiterates this concern about the relevance and direction of Drama Education:

Drama and theatre have also as subjects in the educational system an increasing problem of justification. There is the risk that the subject is looked upon as old-fashioned with no future. If drama teachers do not emphasise that drama and theatre are forms of media that have a future, no one else will... He/she also has to argue the subject’s potential in a media society... Whether the drama teacher has an interest in experimenting by combining drama, theatre and the electronic media, depends on whether she sees drama and theatre as one, which has to be separated from electronic media to preserve identity or whether she finds the subject as multiple and undergoing change all the time (Thestrup, 2003 pp. 148-149).

My own experiences with Drama teachers in discussing the role of technology in Drama education have tended to reflect the attitudes shown in the Millett study. Liliana Galvan (Galvan, 2003) compiled some of the discussion issues from the Special Interest Group on Drama and New Media in the 4th IDEA World Congress in Norway in 2001. She proposed a continuum based on the notion of *favourability*⁴ and used the following headings to organise the varying perceptions of favourability:

- computer
- children
- teacher
- learning process
- video
- virtual space

⁴ This *favourability* is a term that seems to correspond with the notion of *preference*, as used in the Millett (1996) study.

Each heading (as shown in the example in Figure 6) reflected an area of concern that teachers had about the implementation of technology in drama education.

As I mentioned earlier the people present in our group had a wide range of perceptions about the use of technology. Liliana Galvan compiled some of the responses and I'd like to address some of those perceptions now.

Many opinions were expressed in the negative – perhaps revealing an underlying suspicion about the use of technology, or perhaps our culture has developed an innate negativity towards change. With some prompting however we were able to remind the participants that a single viewpoint is anathema to the digital, post-modern world in which we live. Eventually it was conceded that there is likely to be a continuum of perceptions and any single circumstance may be seen to inhabit multiple positions along a continuum of favourability.

The perceptual frame within which an individual or group of teachers operates will either limit or expand the possibilities. I'm willing to assert that it is our responsibility as teachers and academics to develop an awareness of our perceptual position. This is exactly what we are asking students to do every time they reflect on their work; we insist that they identify the subjective nature of their experience (Flintoff, 2002a p.10).

As shown in the slide in Figure 6, teachers expressed both positive and negative concerns about the particular topic. In this example, the negative concerns reflected issues related to learning how to use the technology, cost (both in economic and social terms), that somehow the technology lacks the capacity to accommodate the spontaneity found in traditional drama practice, and that it may bring about a “gender divide” as boys were perceived to be more technology literate and responsive than girls. While the positive concerns reflected the ease of use of computers, the new array of stimuli that can be introduced, the negation

of gender (as a positive deletion in some contexts), access to a wide range of information. This process although driven by the group leaders worked to challenge what began largely as a list of cautions and negative responses.

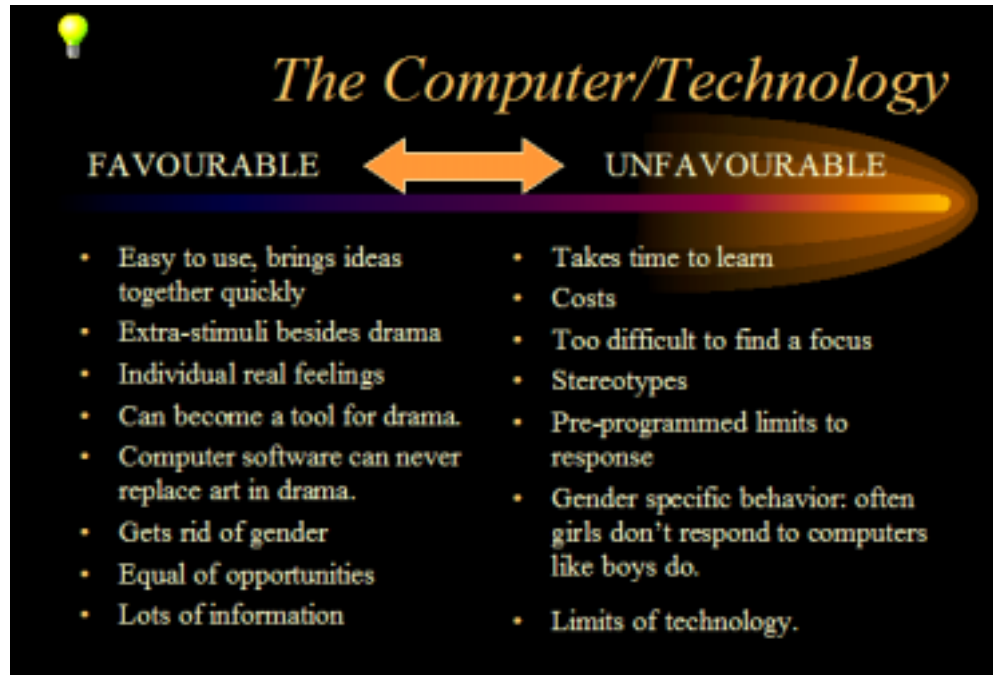


Figure 6: Sample of slide from Keynote Address

It is worth noting at this point that Neelands (1993) was one of the first practitioners to undertake a detailed investigation of the role of technology in Drama Education. His findings have been an important influence on the impetus of this current study. His study asserted an overall positive opinion (with some caveats) on the use of technology in Drama Education:

When I.T. is introduced into drama it cannot be separated from its effects on the experience of the people connected to it (Neelands, 1993 p. 55).

Because 'dramatic' situations tend to involve heightened emotional states, tensions and dilemmas, young people are provided with powerful motivations

for inventing and solving I.T. problems in order to relieve the situation in which they find themselves (Neelands, 1993 p. 55).

By making I.T. visible as part of the meaning-making process in drama, the computer is seen, explicitly, as a medium for communication which is open to social cultural analysis (Neelands, 1993 p. 55).

There is an additional, crucial argument for the use of I.T. in drama. The teaching of technology in schools will in part determine the way our society establishes the relationship between human needs and technological process (Neelands, 1993 p. 55).

Children should be enabled to use I.T. in creative and imaginative contexts as an entitlement and in order to enhance their understanding of its power, how it can be used and the extent to which they have control over it (Neelands, 1993 p. 57).

Based on this early work of Neelands (1993) I have speculated on the implications of emerging technologies in other contexts:

*It was also during 1999 that **Arts Accord** (the affiliation of Arts Education associations in Western Australia) convened a technology-focused conference called **Collaborarts Arts and Technology Conference 1999**. The purpose of this conference was to provide a forum whereby Arts educators might address some of the possibilities of the application of learning technologies to their practice. The conference offered a range of sessions that covered all art forms, especially well represented were the visual arts and music. It is significant to note that only one session was offered that focused on Drama education. *Body and Place – Drama and Interactive Technologies* was presented by this author and had a very small number of attendees. A grand*

total of four drama educators attended the session and reported that they saw great relevance to classroom practice.

This seems to suggest that there is some reluctance on the part of Drama educators to engage with the introduction of computers and associated technologies (Flintoff, 2002c p. 191).

In earlier discussion addressing events at the SIG at the 4th IDEA World Congress, there was quite a degree of preliminary discussion relating to the perceptions that teachers had about introducing technology into their Drama activities. It is interesting to revisit the experience and see that speculation at the time had some possible correspondence with the Millett (1996) study, and this further reinforces the need to undertake the current study:

At that time, around 35 participants, including academics, drama teachers, theatre-in-education practitioners, interactive project developers and performers, came together to consider issues relating to Drama and New Media. Not surprisingly this group of people brought a wide range of perspectives and opinions to the group. One of the most poignant pleas came from an experienced Dutch drama teacher who voiced a concern held by many others in the room, but were too afraid to utter.

What about my *** job?** *And yes I did delete an expletive!*

His concern was genuine. His fear was real. His knowledge, he admitted, was also quite limited when it came to the possibilities of using technology. His view of the situation, like many through history, was that the emerging technology would somehow leave him redundant, a relic of the heady days of Dorothy Heathcote and Gavin Bolton, desperately trying to find relevancy in a generation born to digital and disembodied representation.

As the week progressed it became apparent that there was a wide range of misgivings regarding the introduction of computers. The interesting thing was that there seemed to be an equal degree of fascination with the potential. It was almost as if people wanted to believe that there were benefits but thought it might be wishful thinking. The most positive thing I noticed was that despite the fears and uncertainty there was a willingness to consider possibilities and to learn (Flintoff, 2002a p. 8).

And having raised the spectre of the “process drama in school” progenitors, Heathcote and Bolton, it is back to them that I turn when John Carroll reminds me that the concepts they and others developed have a new significance in the digital era

The concept of enacted role, explored within the process drama field so thoroughly by Heathcote, Boal, Bolton and many others, could be usefully applied here to provide a development of the drama role possibilities of multiple identity play within the classroom environment. This is not a call for an outdated ‘personal development’ approach to drama but a response to the changing cultural forms being generated by mass media and developing digital media (Carroll, 2002 p. 137).

The inevitability of the acceptance of computers seems to have been established quite early, not only by Tony Millett in his study but also speculatively by such practitioners as John Somers in England:

The direct introduction to the school context of VR and related new technologies will be slowed by economic limitations. We cannot ignore, however, that the students we teach will increasingly experience sophisticated electronic media and we should explore the potential use in the curriculum of these new technologies and seek to influence them for the good (Somers, 1998 p. 66).

And quite recently it has been asserted that it is not a new undertaking for Drama practitioners to engage with technology:

...artists laid the groundwork that has since become part of a modern tradition of theatre. Like contemporary artists of today such as Rosemary Myers, they are responding to the technological advancements of the day and exploring them within the bounds of their theatrical work. The employment of technology is not a means in itself but a further resource available to an artist in their desire to communicate a story, message or theme (Jordan, 2002 p. 81).

It remains to be seen if this practice extends to Drama education.

Why, when it seems to others and me that the potential for an interfacing of Drama and Technology seems an exciting and dynamic paradigm shift, do so many colleagues seem to forestall any engagement with the area? As discussed earlier, there are policy documents, such as the Western Australian Curriculum Framework, emerging from educational systems around the world that require teachers to address the need to utilise technology in all learning areas. This may be seen cynically as a need to justify the rapid and sometime excessive investment in technology by educational bodies. In terms of pedagogy there may be little incentive for drama teachers to engage with the technology, but it seems likely that school and departmental policy may well be making such demands. And if such is the case, then it may be essential for drama teachers to quickly engage with the technology to identify effective new practices and to discover the “evidence” to ward off external agencies, such as the Western Australian Curriculum Council if there can be no beneficial outcomes in their professional view.

The basic premise of this current study is that Drama teachers seem reluctant to engage with new and emerging technologies in day-to-day Drama classes. This perception is based on such encounters as those described previously at the Special

Interest Group in Norway; and as reported by Liliana Galvan and Klaus Thestrup, who co-facilitated the group in 2001. But there are other such references in the literature that iterate other practitioners perceptions of the same “negative” sentiments towards technology. Associate Professor John Carroll discusses an instance where after he had just seen a science fiction film, he returned to a Drama education conference and found himself embroiled in a debate about the role of technology and drama. He points out that this argument, with another high profile drama educator who edits a prestigious education journal, proceeded with some scepticism.

I returned to the Drama conference for the next session of papers and workshops to discuss my enthusiasm for drama, computers and cyberspace with the delegates. I ended up engaged in an animated, if somewhat sceptical, discussion with the editor of this very edition of the journal! (Carroll, 2002 p. 130).

He further states quite unequivocally that he perceives a guarded attitude amongst drama educators when it comes to drama and technology. These statements, while anecdotal from Carroll, also reflect my own experiences in trying to engage drama teachers in discussions about what I see as strengths and imperatives in engaging with technology in Drama.

There is an ambivalence towards technology in the educational community that is commonly expressed through a series of oppositional positions common in our culture. One of the dualities clearly present in our schools is the tension existing between drama and technology (Carroll, 2002 p. 130).

It was certainly evident in my discussion with other drama teachers at the conference. The fact that some people would set technology and drama in opposition is evidence of the lingering tension still carried in the educational system. This tension is usually expressed through binary opposites such as

Drama versus Technology, Art versus Industry, Sensitivity versus Brutalism, and High Culture versus Low Culture.

These dualities are a reflection of the still current modernist views that position educated people as 'sensitively attuned' to high culture drama or alternatively sees less-educated people as 'mindlessly enslaved' by low culture entertainment (Carroll, 2002 pp. 130-131).

This study is an effort to understand the “resistance” that I perceive from so many colleagues. Specifically, this study seeks to find some answers and elaborations to the perceptions I experience and to build upon the initial aspect of the study to determine if my perception is current and/or accurate.

Chapter 4: Investigative Method

This study commenced well before the academic context in which it is now presented. Data for the study was collected on the internet during the period May – August in 2003 via a call for participants on the *Drama Education* website.

At that time I was Director of Technology for Drama Australia and the intention was to generate a report about Drama teachers and technology for Drama Australia. Unfortunately, the role of Director of Technology was wound up before the data was processed. As such, it has sat without any substantial analysis until now.

Rationale

There are several compelling reasons for collecting the data via the Internet. It has been suggested that this approach allows access to a broad range of respondents and often allows access to respondents who might otherwise be reluctant to engage in formal surveys,

The Internet and electronic mail increasingly offer the research community opportunities that it did not previously have. Access to information has increased as has access to and discussion with those working in similar areas. One other aspect of 'cyberspace' which presents enormous possibilities to the research community, currently in its infancy, is the use of the Internet to reach individuals as research subjects. In particular, there may be significant research benefits to be gleaned where the group being researched is normally difficult to reach and/or the issues being researched are of a particularly sensitive nature (Coomber, 1997).

As mentioned previously the data set provides opportunities to utilise a multi-modal approach to analysis. The data is in the form of responses to Likert scales, as well as some brief anecdotal responses from participants.

Since this is a preliminary investigation into the existing attitudes there is no traditional experimental method with control groups or pre- and post-testing. The main research methodology employed in this study falls within the qualitative paradigm of *ethnography*.

As discussed by Brian Edmiston (1996), “*ethnographers are not only participants in everyday events, they are also observers of their social worlds*” and further that “*the ethnographer looks for commonalities whereas the phenomenologist looks for individual differences*” (Edmiston, 1996 p.86).

As the researcher is also positioned as a member of the global population under consideration, this study fits more or less within the ethnographic frame, although at times it has a tendency to straddle the *emic/etic* divide, and also generates some small measure of empirical data.

The neologisms “emic” and “etic,” which were derived from an analogy with the terms “phonemic” and “phonetic,” were coined by the linguistic anthropologist Kenneth Pike (1954). He suggests that there are two perspectives that can be employed in the study of a society’s cultural system, just as there are two perspectives that can be used in the study of a language’s sound system. In both cases, it is possible to take the point of view of either the insider or the outsider.

*As Pike defines it, the **emic** perspective focuses on the intrinsic cultural distinctions that are meaningful to the members of a given society (e.g., whether the natural world is distinguished from the supernatural realm in the worldview of the culture) in the same way that phonemic analysis focuses on the intrinsic phonological distinctions that are meaningful to speakers of a given language (e.g., whether the phones /b/ and /v/ make a contrast in meaning in a minimal pair in the language). The native members of a culture are the sole judges of the validity of an emic description, just as the native*

speakers of a language are the sole judges of the accuracy of a phonemic identification.

*The **etic** perspective, again according to Pike, relies upon the extrinsic concepts and categories that have meaning for scientific observers (e.g., per capita energy consumption) in the same way that phonetic analysis relies upon the extrinsic concepts and categories that are meaningful to linguistic analysts (e.g., dental fricatives). Scientists are the sole judges of the validity of an etic account, just as linguists are the sole judges of the accuracy of a phonetic transcription (Letts, 2004).*

Since I am a drama teacher, and one who has been very active in exploring the possibilities of technology in drama education my insights as a member of the target group well belong to the field of **emic** interpretation. This is important in any area of specialisation because the daily practice of drama teachers generates some form of enculturation and specific understandings that may not seem significant to an external observer. On the other hand, as an independent researcher I must be able at times to step back and see trends and behaviours in a more distanced way. This **etic** perspective is important so that the overall validity of judgements and perceptions, particularly in relation to any assertions arising from my interpretation of the quantitative (statistical) elements of the study. The empirical data needs to be valid in scientific terms.

The study is primarily descriptive and interpretive. In this regard it is unlikely to generate any form of universal patterns. However it is very likely that the findings from this study might suggest new directions for future investigators.

The interpretivist paradigm, on the other hand, does not concern itself with the search for broadly applicable laws and rules, but rather seeks to produce descriptive analyses that emphasise deep, interpretive understandings of social phenomena (Smith, 1983).

As this study falls with the “interpretivist” model, it seeks to identify any trends and patterns within the responses and as the researcher is also a member of the target population there will be the opportunity to suggest and reflect upon possible implications of the findings for the target population specifically, that is to interpret the results in ways that are especially meaningful for other drama teachers.

In this study there is the overarching consideration of what influences the behaviour and attitudes of Drama educators in relation to the implementation of technology in their classrooms.

Since the Likert scales are a single dimension measure they are not expected to generate a wide range of generalisable information, nor are they able to offer direct answers to an experimental design. The quantitative analysis is necessarily limited to simple descriptives and a comparison of means to identify any correlation between the responses. This stage of analysis may well reveal some thematic approaches to inform and/or validate the qualitative mode.

As I am also a practicing drama teacher, the statistical analysis is accompanied by some qualitative interpretation based on my experience as a member of the population of Drama educators as well as an attempt to correlate the statistical results with the anecdotal evidence provided in Question 10 of the survey.

Ethical Considerations

As the data collected was the result of an independent inquiry by the researcher, the data was in existence before this academic paper was considered. The researcher undertook this collection in his capacity of Director of Technology for Drama Australia. All steps have been taken to ensure that the data is adequately secured and that no individual is identifiable through the presentation and analysis of the data.

The data was collected via a survey on the Internet and no participant was induced to participate, nor was there a requirement for participants to provide any personal details. There was the option to provide an email address and most participants chose to provide this. All email usernames were subsequently removed from any material that was used within the context of this study.

Since the data set is pre-existing and it is not possible to identify the respondents from the information provided then the ethical aspects of this study seem to suggest that this constitutes a de-identified data set under the definition provided by ECU Ethics Office

***De-identified** data (not re-identifiable, anonymous)*

The process of de-identification can be irreversible if the identifiers have been removed permanently or if the data have never been identified. These data are referred to as "de-identified". It should be recognised that the term "de-identified" is used frequently to refer to sets of data from which only names have been removed. Such data may remain "potentially identifiable" (GPPS, 2004).

Limitations

As alluded to in preceding discussion there is a possibility that some of the limiting factors of this study may affect the reading of the conclusions it generates. As such, I have made every effort to identify where such limitations may occur. The following elements and considerations should be carried by the reader throughout the remainder of this document.

- Since the data was collected on the internet it is possible that it was likely to find respondents are already regular users of technology and as such may skew the results. It is my belief that this was not the case and there seems to be little supporting evidence that simply because an educator uses technology

for his or her own communication and research that they carry the use over into their pedagogy and classroom practice.

- As this questionnaire was originally devised outside the parameters of an academic study it may well contain some inherent flaws, such as the possibility that the online survey biased the sample towards regular technology users, or that the general nature of some questions leaves the interpretation open to conjecture. The study attempts to identify and incorporate some consideration of any problematic areas.
- The sample population draws on a substantial, but diverse group of drama educators. With such a wide scope of experience and contexts amongst respondents, from K – University, it is possible that this limits the generalisability of the analysis. However, as I am a drama practitioner and educator in a variety of contexts, my *emic* perspective, as a member of the larger population from which the sample is drawn, may well serve to provide informed insights that could not be developed by a more distanced observer.
- The scope of Drama education is broad and the approach to Drama along the Theatre/Drama continuum is likely to affect the interpretation of the questions. The limits in this regard are that some users may consider internet research about a Drama topic to be *engagement in a digital environment*, while another may think that actually utilising technology within Drama activities is a more realistic interpretation of the concept. While this may introduce some ambiguity about the type of technology use that is occurring it does begin to provide some insight into the overall use of technology in Drama education contexts.
- As stated previously, non-specific terminology was used in the survey. This has the potential to introduce alternative interpretations of some questions, but given that the *lingua franca* for this field of practice is still under-

developed the study has necessarily drawn upon terms that are in common usage in aligned areas. The responses in most cases do not reflect any general concerns of respondents in this regard. However there are a few responses where the terminology has been challenged. In one instance the respondent indicated they did not understand the term *digital environments* and in another the respondent challenged the way the questionnaire enclosed the term *digital* in inverted commas. In both cases the entire survey was completed

- Finally, the global nature of the sample does not consider the different curriculum demands and expectations of the systems respondents are working within. This means that the distinctions identified in the literature review about the continuum of practice in drama education are not taken into account. It may be likely that a teacher focussing on traditional performance paradigms may see little need for technology, while a generalist teacher using Drama as part of an integrated approach to education is more drawn to technological solutions. This may also form one of the pre-determining factors in whether or not a teacher will ever adopt technology.

Sample

This survey attempted to contact Drama educators from around the world and to some extent it was successful. Respondents appear to be from several countries where Drama education is common. However, the entire study needs to be bracketed by the proviso that gathering data in this way it is possible that it has introduced a tendency to bias the sample towards a group of regular technology users. All conclusions need to be read with that in mind. Coomber (1997) reiterates this limitation in the following:

Clearly, when using the Internet for survey research there will be a bias in terms of who is responding and a relative lack of representation of those who do not have access to the Internet. Those responding will be users of advanced information technology, with all that this suggests in terms of class/stratification, education, personal and life resources. A number of surveys into the demographics of Internet users have consistently found that Internet users are more likely to be white, male, first world residents, relatively affluent and relatively well educated in comparison to any more general population (Nielsen & CommerceNet, 1995; Kehoe & Pitkow, 1996). This obviously makes generalizing about research findings from Internet users to the general population highly problematic. Importantly however, the demographic research suggests that significant changes are occurring which move the user group in the direction of greater representativeness: 'While Internet users still tend to be upscale, their overall characteristics are coming more in line with general population averages', and, 'Internet access and use are becoming increasingly mainstream' (CommerceNet/Nielsen, 1996), also see Fisher et al(1996); Boncheck et al (1996) and Kehoe and Pitkow (1996). Good news for the future perhaps but a range of difficulties remain in the mean-time. Moreover, doing research via the Internet also presents its own specific issues regarding sampling which go beyond the representativeness or otherwise of the aggregate user population (Coomber, 1997).

Given the limitations mentioned above and the added complication that there are some challenges in verifying the authenticity of the respondents, it appears that the survey has garnered a wide range of Drama educators from across the globe. The indicators of this are found in the email domains of respondents and the qualifications and experience they have listed in Question 11 of the survey.

The original questionnaire did not collect any names – only provided the opportunity for participants to provide an email address and all addresses were subsequently made anonymous through deletion of the username. As the sample was drawn from

a global population and participants completed the survey anonymously online there is no identifying data that could potentially be re-identified. As such this researcher believes that there is no risk to confidentiality, nor any legal, ethical or academic responsibilities that are compromised.

The following table (*Table 2*) is an attempt to provide some indication of the scope of the sample. The data has been drawn from examining available information provided in email domain, commentary provided in the question on qualifications or Question 11. It is necessarily tentative and speculative, and I have tried to be as conservative as possible in making any assumptions based on the relatively sparse information available.

The table also suggests that respondents tend to be from English-speaking countries, and as identified in the discussion of limitations to the study this factor may also influence results.

Category of Respondent	Number of Respondents
Australia	27
USA	20
Canada	4
United Kingdom	6
Hungary	1
Singapore	1
Finland	2
Other/Indeterminate	44
K - 7	6
8 - 12	31
Tertiary	11
Pre-service	9
Other/Indeterminate	48

Table 2: A table representing an attempt to categorise respondents.

I believe this breakdown indicates that to some extent there has been an ability to reach a reasonably broad range of Drama educators, in spite of Coomber’s warnings about the seeming homogeneity of most internet users. What it does suggest is that every level of education has been encountered and that respondents tend to be drawn from countries where there is a strong emphasis on Drama education in schools.

Category of Respondent	Number of Respondents
Male	18
Female	31
No suggestion	56

Table 3: Gender identification was particularly difficult and the results above are highly speculative.

The ability to make gender distinctions was particularly difficult and was drawn from mere suggestions in the data provided by respondents. This table (*Table 3*) is included only in the interests of suggesting that there was some spread across gender. The actual numbers are highly speculative and should not be regarded as statistically reliable.

Data Collection

The actual form of data collection is that of a simple attitudinal survey. The survey, presented in complete form in Appendix A, proposed 12 questions of which 9 utilised simple Likert scales, one was an opportunity for an open comment and the last two were relating to demographic information.

Data was collected via a survey presented online. The survey was hosted by an independent company and links to the survey were only available via the *Drama Education: A Global Perspective* website (<http://members.iinet.net.au/~kimbo2>) and via the *Drama Ed Weekly* newsletter hosted at that site and distributed through the *Drama Ed* egroup. There was also one call made to Western Australian drama teachers through the newsletter of the local professional association, indications are that only a small number of Western Australian teachers contributed to the study.

The survey questions are presented below:

1. *I have thought about the use of digital environments as part of my teaching strategy in Drama.*
2. *I have attempted the use of "digital" environments in my Drama class.*
3. *I feel I have the necessary knowledge to use "digital" environments in my Drama classes.*
4. *I feel I have the necessary technical resources to use "digital" environments in my Drama classes.*
5. *I am confident there is a positive use for "digital" environments in Drama education.*
6. *I would never consider the use of "digital" environments in my Drama classes.*
7. *I think knowledge and skill in the use of technology is essential for Drama teachers.*
8. *How important is an understanding of the possibilities for technology in Drama education.*
9. *I would like to learn more about the possibilities for technology in Drama education.*
10. *Enter any comments you feel relevant to the topic, i.e. the use of "digital" environments in Drama education.*
11. *My teaching qualifications are:*
12. *Email:*

The questions are simply structured and are designed to reflect the respondent's own experience. The Likert scales used were True/False for questions 1 and 2, and a 5-point Agree/Disagree scale in questions 3-7 and 9. In retrospect there is an obvious

and somewhat inexplicable departure from the standard form in question 8 where a more interrogative questioning style has been adopted and a 5-point scale of Important/Not Important has been used. It may have been better to maintain a uniformity of style by using the phrasing “*I believe an understanding of the possibilities for technology in Drama education is important*”, and to maintain the common 5-point Agree/Disagree scale. However, as this study commenced with a pre-existing data set this anomaly must be borne in mind by the researcher and any reader.

Data Analysis

Since the Likert scales are a single dimension measure of the variable they are not expected to generate a wide range of generalisability. The statistical analysis is necessarily limited to simple descriptives and a comparison of means to identify any possible correlation between the responses to different questions; this statistical analysis is accompanied by some qualitative interpretation based on my experience as a member of the population of Drama educators, and to some extent there is an attempt to correlate the statistical results with the anecdotal evidence provided by the comments in Question 10.

Item	N	Range	Minimum	Maximum	Mean	Std. Dev.	Variance
Q1	104	1	1	2	1.26	.441	.194
Q2	104	1	1	2	1.56	.499	.249
Q3	105	4	1	5	3.07	1.250	1.563
Q4	105	4	1	5	3.17	1.244	1.547
Q5	105	4	1	5	2.01	.904	.817
Q6	105	4	1	5	4.16	.952	.906
Q7	105	4	1	5	1.76	.883	.779
Q8	105	4	1	5	1.70	.706	.499
Q9	105	4	1	5	1.68	.838	.702
Valid N (listwise)	104						

Table 4: Descriptive statistics of responses to survey items

Table 4 indicates a simple overview of the statistical description of the first nine questions of the survey. The analysis indicates that in the sample there are some general trends in questions 5 – 9 in which the responses indicate a trend towards one

or other end of the scale. Questions 3 and 4 show a general clumping around the central response perhaps indicating some uncertainty over the response or a diversity of opinion. These assumptions will be discussed in the analysis following as each question is considered and discussed independently.

By utilising both forms of data and seeking to find correspondence or disagreement between available data sets the study has a small measure of triangulation and reliability testing embedded in its method.

Appendix B provides the complete raw data set of responses to the Likert scales used in Questions 1 – 9; Appendix C shows the frequency of each response (these are provided in graphical form throughout Chapter 5); and, Appendix D is the complete set of comments provided in response to Question 10.

Chapter 5: Analysis of Data

This chapter will engage with each question in turn and draw upon both the statistical elements that have been generated and comparison with other available data - primarily the comments left by respondents in Question 10.



Readers should note at the outset that the data has been left with original spelling, grammar and other idiosyncrasies, and original responses have been quoted as such throughout Chapter 5. Some responses appear truncated due to input limitations on the survey site.

Question 1

Question 1: I have thought about the use of digital environments as part of my teaching strategy in Drama.

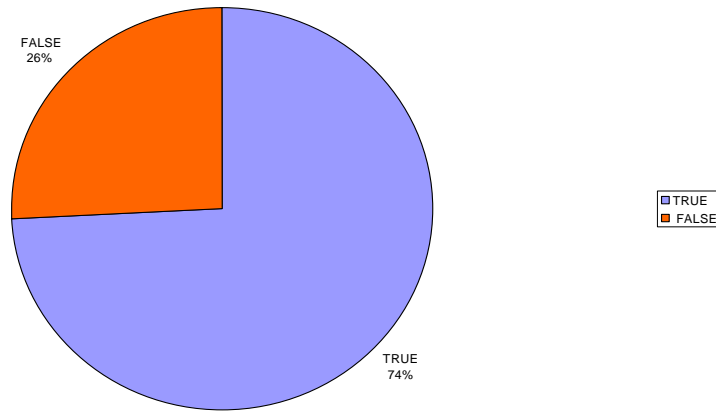


Figure 7: Pie Chart of responses to Question 1

Question 1: I have thought about the use of digital environments as part of my teaching strategy in Drama.

This question is a simple measure of whether or not the respondent has actually given any consideration to the possibility of engaging with digital environments. The graph above (*Figure 7*) indicates that 74% of respondents have thought about this dimension within their teaching. 26% indicate that they have not considered such usage. This question might be used in further analysis to explore why teachers may or may not feel it necessary to consider using digital environments in Drama.

Looking at the Comparison of Means it is possible to speculate on the significance of this question in relation to the overall survey.

Most respondents indicating a “False” response to this question also indicated a “False” response to Question 2 saying that they have not tried to use “digital

environments”. While this is hardly a surprising outcome it does provide some indication of the reliability of the survey results. Similarly there is a suggestion in the comparison with Question 3 that these same respondents also feel they do not have the “*necessary knowledge*” and this may suggest some reason as to why they have not considered or used digital environments. And further the relatively high mean (4.43) suggesting Strongly Disagree for Question 6 (Never consider use) reinforces the apparent reliability when compared to the True responses to this question, i.e. those that said they have thought about the use of digital environments also indicated a negative response to the suggestion that they would never consider using digital environments.

Q1		Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
True	Mean	1.42	2.82	2.90	1.74	4.43	1.60	1.51	1.53
	N	77	77	77	77	77	77	77	77
	Std. Dev.	.496	1.211	1.199	.715	.677	.748	.576	.661
False	Mean	1.96	3.70	3.96	2.74	3.44	2.26	2.30	2.11
	N	27	27	27	27	27	27	27	27
	Std. Dev.	.192	1.103	1.055	.984	1.219	1.059	.724	1.121
Total	Mean	1.56	3.05	3.17	2.00	4.17	1.77	1.71	1.68
	N	104	104	104	104	104	104	104	104
	Std. Dev.	.499	1.242	1.250	.903	.950	.884	.706	.839

Table 5: Comparing Means using Question 1 as Independent Variable

Respondents to both “True” and “False” have indicated through Question 9 that they tend to agree that they would like to learn more about the “*possibilities for technology in Drama education*”. This may be sufficient to indicate a need for more exposure to this type of information through professional development and pre-service training.

There are some seemingly obvious questions that arise from this question:

- Is there some imperative to give consideration to using digital environments? E.g. is there a school, or system, directive that IT must be utilised in all learning areas? Certainly in the USA, UK and Australia

there are curriculum imperatives to engage with technology as part of a broad integrated curriculum.

- Is the use of digital environments considered a legitimate element of Drama education?
- Does the type of Drama that the respondent engages with readily recognise new and emerging approaches to pedagogy?

Question 2

Question 2: I have attempted the use of "digital" environments in my Drama class.

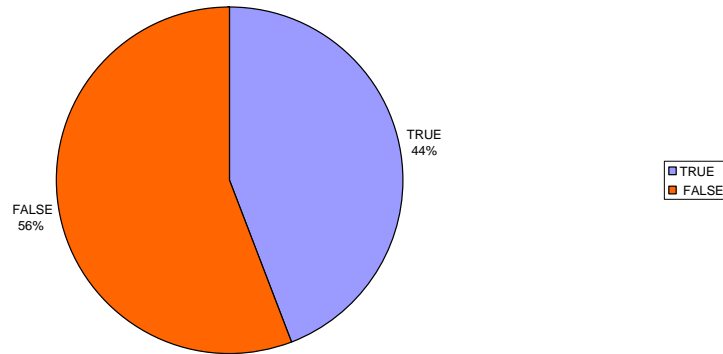


Figure 8: Pie Chart of responses to Question 2

Question 2: I have attempted the use of "digital" environments in my Drama class.

This question is a relatively straightforward measure of the degree to which teachers have already engaged with technology in their Drama classes. 58 respondents, or 56% of the sample, indicated that they have not attempted the use of digital environments. The positive response figure (44%) is a little surprising based on my original perceptions of the case, although as indicated previously there may be an inherent bias in the survey. This figure may reflect that the sample population are likely to be regular users of technology and as a result more likely to engage with and experiment with the use of digital environments. This is not conclusive and further investigation may be required to determine if this figure is accurate in a broader sample. It might be necessary in subsequent studies to apply the survey in other contexts besides the Internet.

Q2		Q1	Q3	Q4	Q5	Q6	Q7	Q8	Q9
True	Mean	1.02	2.46	2.72	1.57	4.61	1.46	1.35	1.41
	N	46	46	46	46	46	46	46	46
	Std. Dev.	.147	1.110	1.205	.720	.537	.751	.566	.617
False	Mean	1.45	3.52	3.53	2.34	3.83	2.02	2.00	1.90
	N	58	58	58	58	58	58	58	58
	Std. Dev.	.502	1.143	1.173	.890	1.062	.908	.675	.931
Total	Mean	1.26	3.05	3.17	2.00	4.17	1.77	1.71	1.68
	N	104	104	104	104	104	104	104	104
	Std. Dev.	.441	1.242	1.250	.903	.950	.884	.706	.839

Table 6: Comparing Means using Question 2 as Independent Variable

Respondents who indicated that they have attempted to use digital environments also indicate:

- not surprisingly, that they have thought about the use (mean 1.02 in Question 1);
- they feel that there are positive applications for digital environments (mean 1.57 in Question 5); and,
- that they feel it is important or very important for Drama teachers to have both skill and knowledge in the use of technology (means 1.46 and 1.35 respectively for Questions 7 and 8)

However, there seems to be less certainty that they have the requisite knowledge or resources to use digital environments, as indicated by a more centralised tendency (means of 2.46 and 2.72) in questions 3 and 4 respectively. Of the negative respondents to this question there is a corresponding shift towards the centre but suggesting a slightly stronger belief that they do not have the necessary knowledge and resources.

Interestingly, even amongst the negative respondents there is an indication through questions 5, 7 and 8 (means 2.34, 2.02 and 2.00 respectively) that they hold the belief that the use of technology is still important.

This question raises issues about the availability of, and access to relevant resources, as well as suggesting that some teachers feel ill-equipped with the requisite knowledge to attempt the use of digital environments, and these possibilities are considered in the discussion of later questions.

Looking at respondent comments in comparison to this question it is possible to find some indication of nature of the uses being found for technology in Drama classrooms. They seem to fall into some broad categories that have a quite a degree of overlap.

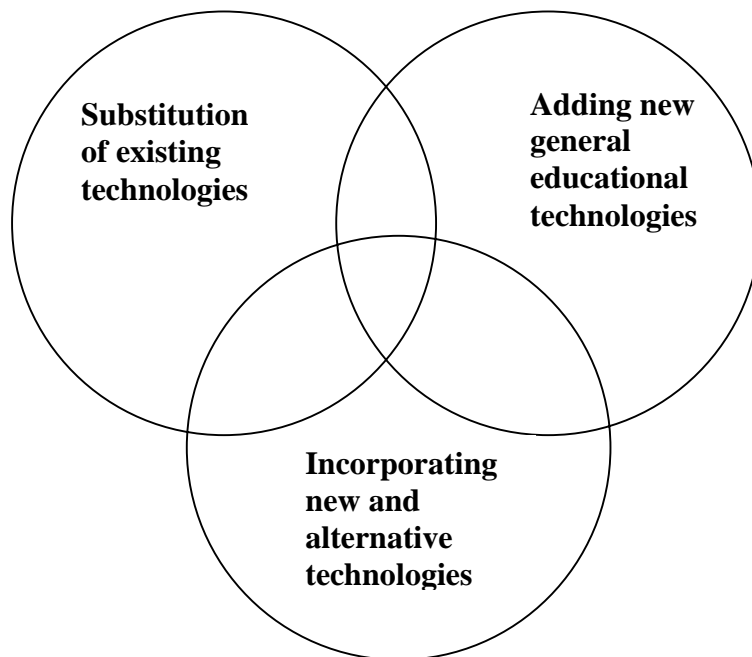


Figure 9: Categories of use of technology identified in survey responses.

Substituting traditional theatre technology with computers as control mechanisms such as sound, lighting and special effects

66: I use lighting & sound equipment during some lessons; and video and projector in past school production of Jesus Christ Superstar.

75: The internet is a ready resource for modern theatrical information. We use video production and multi-media in our performances. A knowledge of computer graphics. Sound production technology “programs such as Sonic Foundry applications” are used to mix sound for productions. Technology is a must in the drama environment. It allows students to expand their knowledge and thinking; thus extending their experiences.

105: I feel that drama is so strongly practical and interactive that using a digital environment works best for research...

Incorporating digital media and internet technology as research tools to expand the scope of students exposure to information

110: Already using webquests; internet research and interactive cdroms in both senior and junior drama courses to great success...

Alternative technology applications where teachers are utilising new approaches to drama activities based on and/or utilising the possibilities offered by new technologies

38: I have attempted to utilise basic chat technology and billboards to access artists...

92: I have used technology in many of my drama classes; it helps today’s technology saturated students respond to situations I give them in a more involved and positive way.

96: However; I believe digital environments go beyond a webquest on Shakespeare. The use of technology in actual performances is increasing; and young people want to work with these technologies...

Question 3

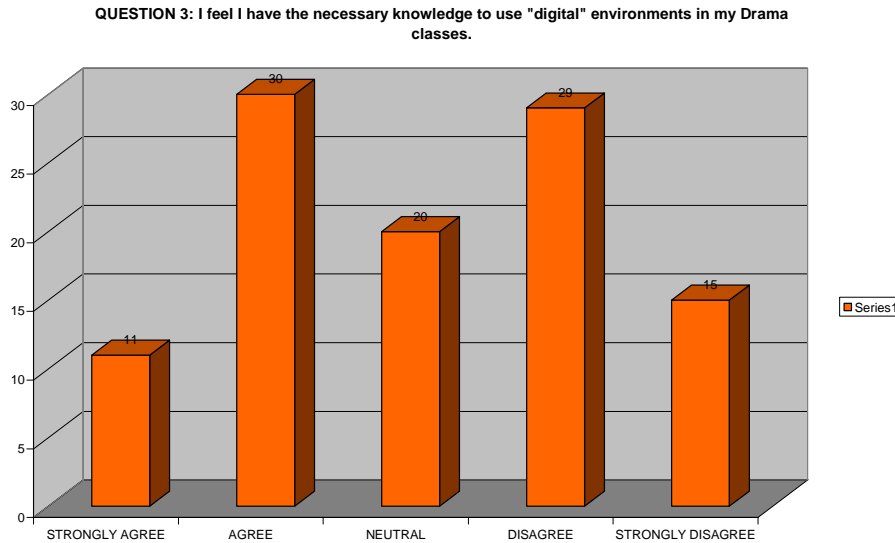


Figure 10: Bar graph of responses to Question 3

Question 3: I feel I have the necessary knowledge to use “digital” environments in my Drama classes.

This question begins to consider the question of whether or not teachers feel they are equipped with appropriate knowledge in order to engage with digital environments. Figure 10 indicates that there is a wide spread of responses to this question. There is a roughly equal division between those that feel they have adequate knowledge (41 respondents agree or strongly agree) and those that feel they do not have adequate knowledge (44 respondents disagree or strongly disagree). This is accompanied by another 20 who are neutral on the issue.

The comments provided in Question 10 also shed some light on this question. There are several responses that suggest that some respondents are quite comfortable with exploring the possibilities

6: *Many teachers think Drama has no compatibility with technology-- but I have discovered many appropriate and exciting uses; and I'm sure there are plenty more... Considering the advances in Technical Theatre and computer use; we can't afford to keep our students in the dark about it-- more exploration is needed.*

9: *It is a sorely neglected area; but with training to combat fear and ignorance the possibilities are endless.*

14: *I am very keen to develop use of ICT in Drama; and try to use the internet; digital cameras; powerpoint; video cameras; stereos; and lighting during my teaching.*

while some are tentatively making some headway into the arena of Drama and technology

28: *I am only just starting to dabble. I understand that 'digital' and other technological developments are becoming increasingly important within drama; theatre and education fields. I do not feel equipped to be able to use them that successfully within my teaching environments - but I am starting to play with very simple things. It is always about time - balancing the demands of the existing loads/environments whilst moving forward in positive ways . . . we have all heard these type of hurdles before. . .*

59: *I think using digital and media technology is a great idea but due to lack of funds; equipment is hard to facilitate and you need to have professional development on how to work the resources.*

and others indicate that the respondents are “at sea”

51: *I don't understand the term 'digital environment'*

107: *Underfunding and a lack of facilities precludes anything like this. Because of this I haven't learned about it and therefore feel totally 'at sea' about all of it.*

	Willing	Unwilling	Uncertain	Uncategorised
Statements				
	6	8	15	13
	9	17	28	31
	14	33	38	40
	20	70	51	42
	22		65	69
	23		73	76
	59		78	99
	62		88	100
	66		107	
	74			
	75			
	77			
	81			
	87			
	92			
	95			
	96			
	102			
	105			
	110			
Total number of statements in category	20	4	9	8

Table 7: Question 10 responses categorised in relation to "knowledge" about use of digital environments

There seem to be 3 broad categories of comments that relate to this question. I have coded them as Willing, Unwilling and Uncertain to suggest that some respondents feel that they have adequate knowledge and are likely to apply it (*Willing*), some see little need or desire to engage with the issue (*Unwilling*), and others simply appear to be uncertain about how or why they might use digital environments (*Uncertain*). The chart above indicates my coding of statements into these three categories.

These figures tend to suggest that there is a significant degree of uncertainty concerning how to go about introducing digital environments into the Drama class. While there is little direct evidence, this question does tend to suggest that there is a need for greater provision of, or access to, training at professional development and pre-service levels. This is reinforced by the consistently low means (1.73, 1.60, 1.70, 1.72 and 1.67), for all categories of response in this question, to question 9 asking if respondents “*would like to learn more*”.

	Q3	Q1	Q2	Q4	Q5	Q6	Q7	Q8	Q9
Strongly Agree	Mean	1.09	1.27	2.00	1.45	4.36	2.09	1.55	1.73
	N	11	11	11	11	11	11	11	11
	Std. Dev.	.302	.467	1.183	.934	1.206	1.514	.688	1.272
Agree	Mean	1.10	1.30	2.77	1.67	4.27	1.43	1.43	1.60
	N	30	30	30	30	30	30	30	30
	Std. Dev.	.305	.466	1.073	.661	.944	.679	.568	.675
Neutral	Mean	1.30	1.65	3.35	2.20	4.00	2.00	1.85	1.70
	N	20	20	20	20	20	20	20	20
	Std. Dev.	.470	.489	1.040	.894	1.026	.918	.671	.801
Disagree	Mean	1.34	1.72	3.31	2.21	4.14	1.66	1.90	1.72
	N	29	29	29	29	29	29	29	29
	Std. Dev.	.484	.455	1.105	.978	.953	.614	.817	.922
Strongly Disagree	Mean	1.50	1.86	4.33	2.47	4.07	2.07	1.80	1.67
	N	14	14	15	15	15	15	15	15
	Std. Dev.	.519	.363	1.113	.834	.704	.884	.676	.724
Total	Mean	1.26	1.56	3.17	2.01	4.16	1.76	1.70	1.68
	N	104	104	105	105	105	105	105	105
	Std. Dev.	.441	.499	1.244	.904	.952	.883	.706	.838

Table 8: Comparing Means using Question 3 as Independent Variable

These categories are somewhat arbitrary but they do indicate to some extent that most of those who feel they have an adequate degree of knowledge are also willing to apply that knowledge. In some cases respondents suggest limitations and appropriate uses, such as the following questions

78: *Important that it is there to support the significant learning of drama and not to drive it. Can enhance but doesn't have to be digital.*

81: I too am doing graduate work in the use of Information Technology in my teaching. So far; my opinion and experience is that IT is useful in supporting Drama learning for communication ie. email; producing newsletters etc. and in production work ie. producing programs and other imagery; internet research; and creating using presentation technology. As far as I can see; the actual process of teaching Drama is actually on the other end of the continuum from Virtual experiences. Yes we use our imaginations to create imaginary situations but we do it in real time with the other people in the same room and most of the best drama learning occurs because of that real contact between people. I don't really know what sort of "digital environments" you are referring to or how to use them in a Drama class but I am very interested in hearing your thinking in this area.

Question 4

Question 4: I feel I have the necessary technical resources to use “digital” environments in my Drama classes.

This question begins to address the issue of access to and availability of appropriate technical resources that will allow teachers to engage with digital environments.

A total of 37 respondents answered Agree (26) or Strongly Agree (11) indicating that they believe they have adequate resources to engage with digital environments. 15 were neutral on the question and 53 respondents suggested that they did not have sufficient technical resources.

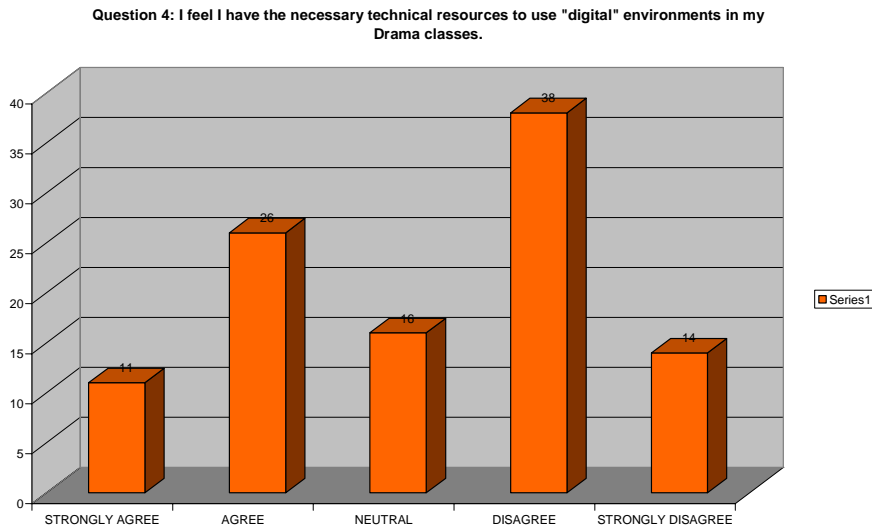


Figure 11: Bar graph of responses to Question 4

It is interesting to note that when looking at the means for Question 3 in relation to this question there is a general tendency to be less certain about the respondents requisite knowledge.

Of those who either Disagree (38) or Strongly Disagree (14) that they have necessary resources there is a tendency towards a neutral response in question 3. This poses an interesting question in that if they are uncertain about the degree of knowledge why do they seem so sure that the requisite resources are not available. To some extent

there is an indication that this is because there is no, or limited, access to resources in the first place.

Q4		Q1	Q2	Q3	Q5	Q6	Q7	Q8	Q9
Strongly Agree	Mean	1.09	1.27	2.00	1.36	4.00	2.27	1.55	1.73
	N	11	11	11	11	11	11	11	11
	Std. Dev.	.302	.467	1.183	.505	1.612	1.348	.820	.786
Agree	Mean	1.08	1.42	2.69	1.77	4.46	1.50	1.69	1.46
	N	26	26	26	26	26	26	26	26
	Std. Dev.	.272	.504	1.192	.652	.508	.583	.549	.582
Neutral	Mean	1.20	1.53	3.00	2.00	4.31	1.38	1.38	1.50
	N	15	15	16	16	16	16	16	16
	Std. Dev.	.414	.516	1.033	.894	.704	.500	.500	.632
Disagree	Mean	1.32	1.63	3.11	2.05	4.18	1.87	1.74	1.76
	N	38	38	38	38	38	38	38	38
	Std. Dev.	.471	.489	1.060	.868	.865	.875	.601	.883
Strongly Disagree	Mean	1.64	1.86	4.57	2.86	3.50	2.00	2.14	2.00
	N	14	14	14	14	14	14	14	14
	Std. Dev.	.497	.363	.756	1.099	1.160	1.038	1.099	1.240
Total	Mean	1.26	1.56	3.07	2.01	4.16	1.76	1.70	1.68
	N	104	104	105	105	105	105	105	105
	Std. Dev.	.441	.499	1.250	.904	.952	.883	.706	.838

Table 9: Comparing Means using Question 4 as Independent Variable

Referring to Appendix D and the comments there is some support for this assumption and the following comments suggest that access is limited or difficult in some contexts:

38: I have attempted to utilise basic chat technology and billboards to access artists through the Qld Theatre Co. but lack of fully operational technology is a huge problem and teachers and students need education to see this as a positive learning tool. A lot of time is wasted due to problems with school networks and computers crashing etc and students lose focus easily. they also tend to see it as a chance to muck around as most of them utilise this technology for entertainment at home to chat to their friends etc.

59: *I think using digital and media technology is a great idea but due to lack of funds; equipment is hard to facilitate and you need to have professional development on how to work the resources.*

95: *My desire to use technology often exceeds the resources and training available.*

Similar sentiments are also reflected in statements 77, 88, 96, 99 and 107.

77: *The possibilites are great in this area but access and training will continue to be a problem ... almost insurmountable. The rate at which technology changes requires almost a full-time commitment. Considering a rear projection screen costs \$8000 and data projectors \$3000-\$30,000 who can afford to set up a system?*

88: *I think we need to really consider how accessible such environments are drama teachers in terms of hardware available in drama teaching spaces. No technology no access.*

96: *It is sometimes hard to book computer time for drama because people see it as “just drama”. I’ve had other teachers cross out my bookings because of this...*

99: *Without the technology or aces to it – usage is a moot point.*

107: *Underfunding and a lack of facilities precludes anything like this...*

These last few statements also seem to reflect an emerging issue that in some contexts the needs of drama are not well understood by administrators and other teaching staff. It is likely that this fact is presenting obstacles for Drama teachers to effectively gain access to requisite resources to expand the use of technology in their classes.

Question 5

Question 5: I feel there is a positive use for “digital” environments in Drama education.

This question is intended to measure the degree to which teachers feel that there is some benefit to engaging with digital environments in Drama. As indicated in Figure 10 presented in the discussion of Question 3 there appears to be some small measure of antipathy towards the use of technology at all.

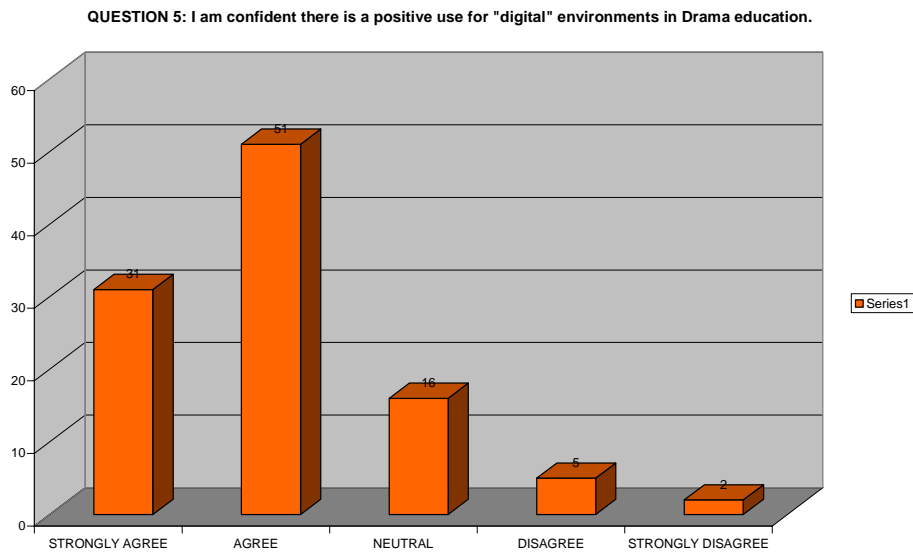


Figure 12: Bar graph of responses to Question 5

Despite such comments (from Appendix D) as –

8: I believe drama is “two boards and a passion”. I also believe with Aquinas and Aristotle that the ideal is one student and one teacher under a tree...not in front of screen with limited human interaction. I also believe with Aristotle that the purpose of drama is to “please and to communicate and not to teach moral lessons; which is best left to the class room and social sciences.

17: We are beginning to forget that the one most important component in theatre is people; not machines. Too many tech wiz's at my school want us to use it but don't have enough to go around AND when someone does use one of their magic machines it doesn't work. I'd rather just use the kids - they have more to say.

there seems to be a strong tendency towards the belief that there are positive applications for digital environments. This tendency is not only represented in such statements as -

9: It is a sorely neglected area; but with training to combat fear and ignorance the possibilities are endless.

20: I use a digital camera; digital videography; powerpoint; video editing equipment both digital and non-digital; and word processing programs where digital imagery can be input. I think technology can only enhance the drama classroom.

which appear to offset the less optimistic viewpoints, but also in the raw descriptive data where 82 (or 79% of) respondents indicate they either agree or strongly agree with the assertion that there are positive uses for digital environments in Drama.

This question seems to confirm without much question that Drama teachers are willing to consider the possibilities of engaging with digital technologies in developing their Drama classes. The comparison of means figures also shows that despite the belief that digital technologies may offer benefit to Drama classes, there is still a tendency towards a neutral position on questions 3 and 4. There appears to be some correlation between this question and the two questions relating to necessary knowledge (Question 3) and resources (Question 4).

Q5		Q1	Q2	Q3	Q4	Q6	Q7	Q8	Q9
Strongly Agree	Mean	1.03	1.19	2.26	2.58	4.71	1.55	1.35	1.32
	N	31	31	31	31	31	31	31	31
	Std. Dev.	.180	.402	1.064	1.177	.783	.850	.608	.599
Agree	Mean	1.24	1.67	3.33	3.22	4.18	1.80	1.75	1.65
	N	51	51	51	51	51	51	51	51
	Std. Dev.	.428	.476	1.194	1.222	.713	.825	.523	.658
Neutral	Mean	1.60	1.80	3.63	3.69	3.56	1.88	1.94	2.06
	N	15	15	16	16	16	16	16	16
	Std. Dev.	.507	.414	1.088	1.078	.814	.885	.680	.854
Disagree	Mean	1.60	1.80	3.00	4.00	3.20	2.20	2.20	2.40
	N	5	5	5	5	5	5	5	5
	Std. Dev.	.548	.447	1.225	.707	1.643	1.643	.837	1.517
Strongly Disagree	Mean	2.00	2.00	4.50	5.00	2.50	2.00	3.00	3.00
	N	2	2	2	2	2	2	2	2
	Std. Dev.	.000	.000	.707	.000	2.121	.000	2.828	2.828
Total	Mean	1.26	1.56	3.07	3.17	4.16	1.76	1.70	1.68
	N	104	104	105	105	105	105	105	105
	Std. Dev.	.441	.499	1.250	1.244	.952	.883	.706	.838

Table 10: Comparing Means using Question 5 as Independent Variable

Table 10 shows that there seems to be a corresponding lack of knowledge and resources (questions 3 and 4) with those respondents who believed that there was not a positive outcome for using digital technology. While numbers are small they do suggest that some of these respondents are philosophically opposed to the use of technology.

This is reinforced by the comments provided by some of these respondents in Question 10. One example is

33: Drama is a celebration of humanity using our natural environment from which we are made. We are NOT a digital creation but a marvellous spirit comprised of water wind fire and earth. Our dramas should be about exploring and savouring these elements.

This respondent while in the minority answered that they strongly disagree that there is a positive use as well as expressing the opinion in Question 8 that they believe an

understanding of the possibilities for technology is “Very Unimportant” and strongly disagreed in Question 9 that they would like to learn more. This survey does not bear out many incidences of this type of response but referring back to the limitations suggested by Coomber in earlier discussions, it is quite possible and arguably likely that this type of response is not evident because the survey being conducted online failed to be encountered by teachers with such strongly held views who may not be using technology in any significant way at all.

Question 6

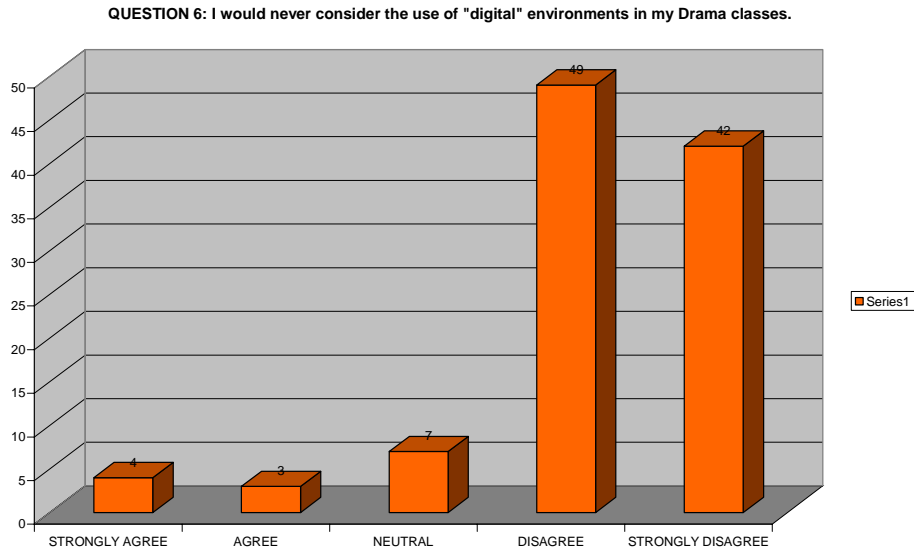


Figure 13: Bar graph of responses to Question 6

Question 6: I would never consider the use of “digital” environments in my Drama classes.

This question was included as a discriminator and a reliability check. It is hardly surprising that very few people would completely discount the possibility of new practices. Although it can be seen from Figure 13 there appear to be some respondents who are willing to do so.

Interestingly, the same respondent (#33) that was mentioned at the end of the end of the discussion of Question 5 also chose to express a strong agreement with the statement that they “*would never consider the use of digital environments*”. This seems, as discussed earlier, to be a philosophical protest against the use of technology, and also seems to be a viewpoint shared by respondent #72 and somewhat supported by #17 who also asserts that:

17: *We are beginning to forget that the one most important component in theatre is people; not machines. Too many tech wiz's at my school want us to use it but don't have enough to go around AND when someone does use one of their magic machines it doesn't work. I'd rather just use the kids - they have more to say.*

Q6		Q1	Q2	Q3	Q4	Q5	Q7	Q8	Q9
Strongly Agree	Mean	1.75	2.00	2.50	2.75	3.00	3.50	3.25	3.00
	N	4	4	4	4	4	4	4	4
	Std. Dev.	.500	.000	1.291	2.062	1.826	1.291	1.258	2.309
Agree	Mean	2.00	2.00	3.00	4.67	3.33	2.00	2.33	2.33
	N	3	3	3	3	3	3	3	3
	Std. Dev.	.000	.000	1.000	.577	.577	1.732	.577	1.528
Neutral	Mean	1.67	1.83	4.00	3.57	2.57	2.14	1.86	2.00
	N	6	6	7	7	7	7	7	7
	Std. Dev.	.516	.408	1.155	1.397	.535	.900	.900	.577
Disagree	Mean	1.27	1.67	3.22	3.37	2.22	1.78	1.82	1.73
	N	49	49	49	49	49	49	49	49
	Std. Dev.	.446	.474	1.195	1.112	.771	.685	.527	.638
Strongly Disagree	Mean	1.10	1.31	2.79	2.81	1.48	1.50	1.36	1.38
	N	42	42	42	42	42	42	42	42
	Std. Dev.	.297	.468	1.279	1.215	.671	.804	.533	.661
Total	Mean	1.26	1.56	3.07	3.17	2.01	1.76	1.70	1.68
	N	104	104	105	105	105	105	105	105
	Std. Dev.	.441	.499	1.250	1.244	.904	.883	.706	.838

Table 11: Comparing Means using Question 6 as Independent Variable

An examination of the comparison of means in Table 11 shows a strong tendency towards willingness to consider the use of digital environments. 91 respondents (86%) indicated that they were willing to consider such usage and not surprisingly many of them had already done so as indicated by the means (1.27 and 1.10) for Question 1. These respondents also seem generally willing to pursue further study or training as indicated by the means 1.73 and 1.38 for Question 9.

Question 7

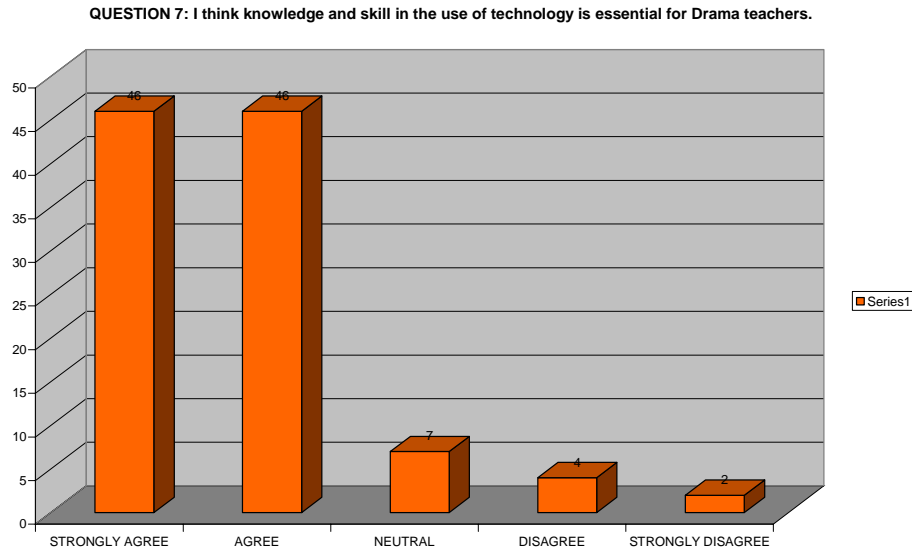


Figure 14: Bar graph of responses to Question 7

Question 7: I think knowledge and skill in the use of technology is essential for Drama teachers.

This question was included in order to gauge to what extent Drama teachers believe that technology competencies should be amongst their core skills. The question lends itself to interpretations that argue for changes to the degree and depth of technology learning in pre-service training and professional development opportunities.

Figure 14 suggests a strong trend amongst those polled towards the belief that knowledge and skill in the use of technology is in fact essential for Drama teachers. There are a few dissenters (who have been discussed earlier) from that perspective but the tendency towards agreement is unarguable as 91 respondents (86%) responded affirmatively.

Interestingly, #33 responded that they agreed with this statement. To what extent this is a deviation from previously stated opinions, or perhaps a recognition that their

practice might somehow differ from the core practice of Drama education, is difficult to determine. It does raise the question of whether or not such respondents might see that there is some measure of inevitability in the adoption of digital technologies. If such were the case it might suggest that such respondents are engaged in a marginal area of Drama, or that they may choose to engage in other activities if technology use becomes prevalent. That aspect however is all conjecture at this stage.

Q7		Q1	Q2	Q3	Q4	Q5	Q6	Q8	Q9
Strongly Agree	Mean	1.13	1.36	2.80	3.02	1.83	4.43	1.30	1.37
	N	45	45	46	46	46	46	46	46
	Std. Dev.	.344	.484	1.204	1.183	.825	.779	.465	.572
Agree	Mean	1.28	1.67	3.24	3.33	2.13	4.17	1.93	1.78
	N	46	46	46	46	46	46	46	46
	Std. Dev.	.455	.474	1.214	1.175	.980	.709	.680	.814
Neutral	Mean	1.57	1.86	4.14	3.00	2.14	3.43	2.29	2.14
	N	7	7	7	7	7	7	7	7
	Std. Dev.	.535	.378	.900	1.633	.690	1.397	.756	.690
Disagree	Mean	1.75	2.00	3.25	3.75	2.25	2.75	2.50	2.00
	N	4	4	4	4	4	4	4	4
	Std. Dev.	.500	.000	1.258	1.893	.500	1.500	.577	1.414
Strongly Disagree	Mean	1.50	1.50	1.00	2.50	2.50	3.00	2.00	4.00
	N	2	2	2	2	2	2	2	2
	Std. Dev.	.707	.707	.000	2.121	2.121	2.828	1.414	1.414
Total	Mean	1.26	1.56	3.07	3.17	2.01	4.16	1.70	1.68
	N	104	104	105	105	105	105	105	105
	Std. Dev.	.441	.499	1.250	1.244	.904	.952	.706	.838

Table 12: Comparing Means using Question 7 as Independent Variable

Table 12 shows us a general consensus between this question and others that reflect a positive attitude towards the use of technology. There is a clearly traceable trend in response to the desire to learn more (Question 9), where the degree of agreement with this question is directly reflected in the mean responses in Question 9. Once again, amongst those that do not see the skill and knowledge as essential there is a corresponding lack of desire to engage in further learning, while those that consider skill and knowledge as essential are quite strongly drawn towards the opportunity to learn more.

Despite this question seeming to pose an absolute, several respondents keenly defended the position that technology is indeed an essential part of Drama teacher expertise

6: Many teachers think Drama has no compatibility with technology-- but I have discovered many appropriate and exciting uses; and I'm sure there are plenty more... Considering the advances in Technical Theatre and computer use; we can't afford to keep our students in the dark about it-- more exploration is needed.

23: I think teachers need to consider technology not just as a tool to enhance teaching in the classroom; but as a tool to enhance performance. Technology is growing in all areas of our world and if students can't apply it to their arts subjects as well; they may get left behind.

28: I am only just starting to dabble. I understand that 'digital' and other technological developments are becoming increasingly important within drama; theatre and education fields. I do not feel equipped to be able to use them that successfully within my teaching environments - but I am starting to play with very simple things. It is always about time - balancing the demands of the existing loads/environments whilst moving forward in positive ways ...we have all heard these type of hurdles before...

40: Stop using quotation marks around the word digital - it makes its use feel like a kind of gimmick. Digital environments in Drama education; both aural and visual are liberating and enabling.

75: The internet is a ready resource for modern theatrical information. We use video production and multi-media in our performances. A knowledge of computer graphics is needed for poster design. Sound production technology "programs such as Sonic Foundry applications" are used to mix sound for

productions. Technology is a must in the drama environment. It allows students to expand their knowledge and thinking; thus extending their experiences.

105: Digital environments and cutting-edge technology are vital to the updated teaching of drama...

This question suggests that a shift in the core requirements of Drama teachers has taken place and that technology is considered an essential aspect of Drama teacher competencies. If this is the case the immediate implication is that pre-service and training providers will need to address the matter with some urgency.

Question 8

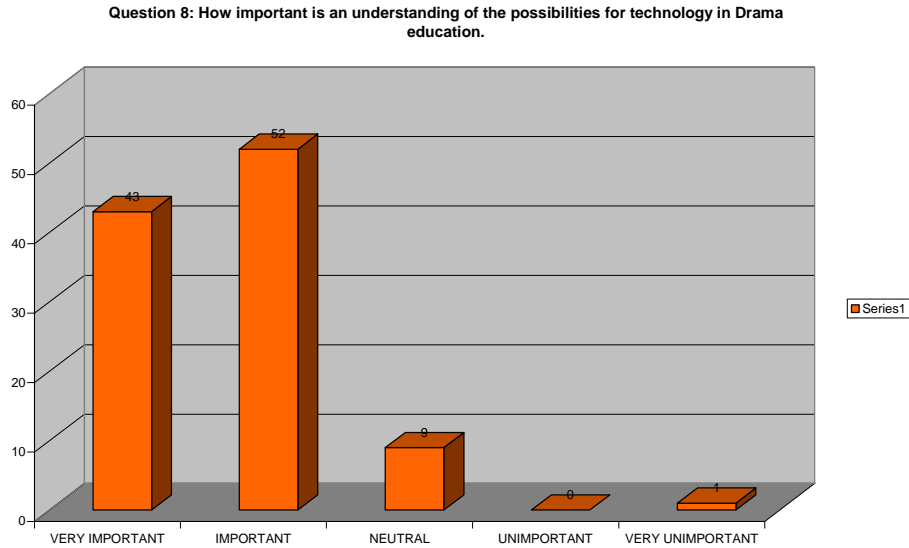


Figure 15: Bar graph of responses to Question 8

Question 8: How important is an understanding of the possibilities for technology in Drama education.

This question is quite similar to Question 7 previously discussed but as it refers to *possibilities* it is intended to be a little more forward-looking. The intention was that this question might relate to emerging technologies and the implications for the future of Drama education. If we are moving into a more technological world, will there be a need to adapt our practice to accommodate evolving and adaptive forms, as well as changing attitudes and perceptions of students?

The responses to this question show a strong tendency towards agreement, 94 respondents (89%) responded that they agree or strongly agree with this statement. This suggests that many of the respondents believe that technology is likely to become more significant to Drama education. There was only one absolute dissenter in this question and that was #33 who has reasonably consistently expressed a negative view towards the role of technology in Drama education.

Q8		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q9
Very Important	Mean	1.02	1.24	2.72	2.95	1.70	4.58	1.35	1.37
	N	42	42	43	43	43	43	43	43
	Std. Dev.	.154	.431	1.260	1.253	.914	.626	.752	.655
Important	Mean	1.37	1.77	3.29	3.27	2.12	4.08	1.87	1.71
	N	52	52	52	52	52	52	52	52
	Std. Dev.	.486	.425	1.194	1.140	.676	.788	.687	.605
Neutral	Mean	1.67	1.78	3.33	3.44	2.56	3.00	3.11	2.56
	N	9	9	9	9	9	9	9	9
	Std. Dev.	.500	.441	1.323	1.667	1.130	1.414	1.054	1.333
Very Unimportant	Mean	2.00	2.00	4.00	5.00	5.00	1.00	2.00	5.00
	N	1	1	1	1	1	1	1	1
	Std. Dev.	.	.	.	.	.	.	.	.
Total	Mean	1.26	1.56	3.07	3.17	2.01	4.16	1.76	1.68
	N	104	104	105	105	105	105	105	105
	Std. Dev.	.441	.499	1.250	1.244	.904	.952	.883	.838

Table 13: Comparing Means using Question 8 as Independent Variable

The assumption about the increasing significance of technology in the previous paragraph is to some extent reinforced by the comments provided in Question 10. Some examples that support this interpretation are:

6: Many teachers think Drama has no compatibility with technology-- but I have discovered many appropriate and exciting uses; and I'm sure there are plenty more... Considering the advances in Technical Theatre and computer use; we can't afford to keep our students in the dark about it-- more exploration is needed.

9: It is a sorely neglected area; but with training to combat fear and ignorance the possibilities are endless.

15: As a first year drama teacher who does not have her own classroom; yet; I have not had the opportunity to use as much technology as I hope to some day. I am still learning to use it myself; but know that what is out there is definitely worth exploring. The more we can know about anything; the better

we can be and the better we can equip our students for the world they will be entering and competing in.

20: I use a digital camera; digital videography; powerpoint; video editing equipment both digital and non-digital; and word processing programs where digital imagery can be input. I think technology can only enhance the drama classroom.

22: I work in the NSW public system and have to fight for every dollar I want to spend on technology. When it comes to budgets; will they ever get that Drama does not stop at mask making. Yet; we are their first port of call when the school needs a p

23: I think teachers need to consider technology not just as a tool to enhance teaching in the classroom; but as a tool to enhance performance. Technology is growing in all areas of our world and if students can't apply it to their arts subjects as well; they may get left behind.

75: The internet is a ready resource for modern theatrical information. We use video production and multi-media in our performances. A knowledge of computer graphics is needed for poster design. Sound production technology "programs such as Sonic Foundry applications" are used to mix sound for productions. Technology is a must in the drama environment. It allows students to expand their knowledge and thinking; thus extending their experiences.

102: Digital environments and cutting-edge technology are vital to the updated teaching of drama. I have been able to "take" my kids to Greece to see the great theaters; "toured" some New York theaters; IM'd with a couple of working actors in New York; LA; and Chicago during my classes; and shown videos. All of these things were exciting for the kids and exciting for

me. And on a side note; it made an impression on my students that I was as technologically literate as they were.

While the evidence is limited there is some degree of support and it might tentatively be proposed that this question identifies a measure of looking into the future. Further evidence might be sought in that the comments provided by the respondents above seem to reiterate Tony Millett's finding mentioned in the literature review that a significant number of Drama teachers believed that "*Students will use computer applications such as the World Wide Net and Virtual Reality to study Drama*" (Millett, 1996) and my own hyperbolic speculation on the position of Drama teachers in the future, i.e. amidst computer programmers, systems analysts, virtual reality, etc.

A significant issue arises here in how can we determine what direction technology will take and as Drama teachers, how do we keep abreast of the developments and implications for our subject. The comment left by #23 echoes the sentiment and the importance of this question – "*Technology is growing in all areas of our world and if students can't apply it to their arts subjects as well; they may get left behind.*"

The most obvious solution seems to lie in the provision of appropriate resources and training but this has significant ramifications for the structure and organisation of schools and colleges, as well as the allocation of time and money to resource the needs of Drama appropriately. The respondent #22 has flagged this aspect in the comment that they "*...have to fight for every dollar I want to spend on technology. When it comes to budgets; will they ever get that Drama does not stop at mask making...*"

The obvious omission in this discussion to date is: **What are the needs of Drama teachers in regards to technology?** And subsequently: **What are the competencies that are needed to address these needs?** These concerns will directly impact the structure of existing pre-service education and professional development.

Question 9

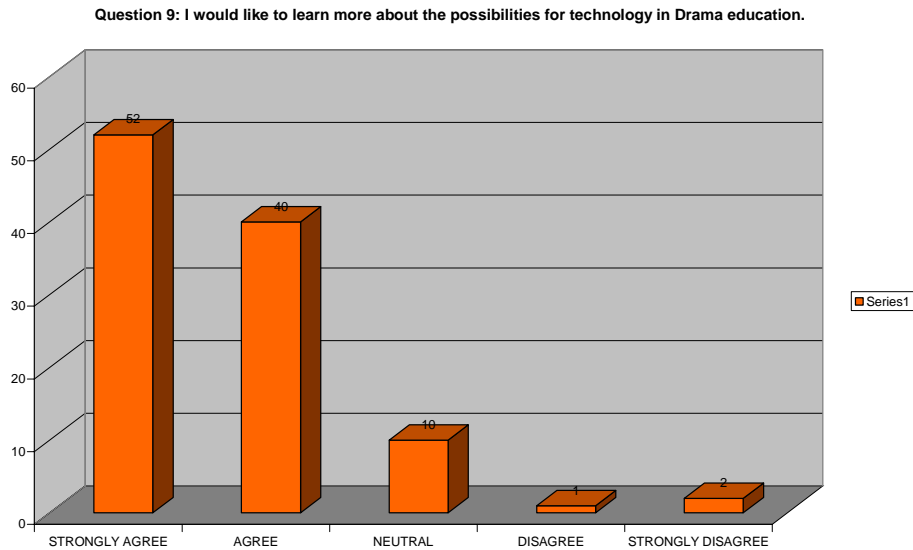


Figure 16: Bar graph of responses to Question 9

Question 9: I would like to learn more about the possibilities for technology in Drama education.

This question really addresses the desire for teachers to engage with more learning about the role of technology in Drama education. 92 respondents (87%) confirm that they would like to learn more. This question has the largest number of responses to the Strongly Agree option.

While there are a small number of respondents who express a desire to know no more about the possibilities for technology, there is about 10% of the sample population who remain neutral on the matter. Only two of the Neutral respondents left comments. These offer a little insight into the thinking behind their response:

78: Important that it is there to support the significant learning of drama and not to drive it. Can enhance but doesn't have to be only digital.

92: *I have used technology in many of my drama classes; it helps today's technology saturated students respond to situations I give them in a more involved and positive way.*

The response from #78 suggests that they see technology in a support role and somewhat peripheral to the core activity of Drama. The way #92 refers to their use of technology could seem to reiterate the perception of this “support” function of technology. This might explain the neutral response to the desire to learn more in that if the technology is somehow only an element in supporting Drama then it does not need to be engaged with in any greater depth than other supportive practices, such as mask, costume, make-up, etc.

Q9		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Strongly Agree	Mean	1.16	1.41	2.98	3.08	1.73	4.40	1.50	1.44
	N	51	51	52	52	52	52	52	52
	Std. Dev.	.367	.497	1.291	1.218	.843	.934	.728	.574
Agree	Mean	1.33	1.67	3.18	3.18	2.20	4.03	1.83	1.88
	N	40	40	40	40	40	40	40	40
	Std. Dev.	.474	.474	1.174	1.238	.791	.660	.712	.516
Neutral	Mean	1.30	1.70	3.20	3.20	2.10	4.30	2.30	1.80
	N	10	10	10	10	10	10	10	10
	Std. Dev.	.483	.483	1.398	1.398	.738	.675	1.160	.789
Disagree	Mean	2.00	2.00	3.00	5.00	3.00	2.00	4.00	3.00
	N	1	1	1	1	1	1	1	1
	Std. Dev.	.	.	.	.	.	.	.	.
Strongly Disagree	Mean	2.00	2.00	2.50	4.50	4.50	1.00	3.50	4.00
	N	2	2	2	2	2	2	2	2
	Std. Dev.	.000	.000	2.121	.707	.707	.000	2.121	1.414
Total	Mean	1.26	1.56	3.07	3.17	2.01	4.16	1.76	1.70
	N	104	104	105	105	105	105	105	105
	Std. Dev.	.441	.499	1.250	1.244	.904	.952	.883	.706

Table 14: Comparing Means using Question 9 as Independent Variable

Of those who strongly agree that they would like to learn more there seems to be a general affirmation of this point in any comments they left.

What is more pleasing, if a little surprising, is that some respondents seem to be open to be convinced that technology has a role to play. Some examples of this position can be found in such combinations as respondent #8 who asserted at the beginning of their comment that “*I believe drama is ‘two boards and a passion’*” ; in itself a somewhat conservative view of Drama as theatre. But this same respondent indicated in response to this question (9) that they agree they would like to learn more. Similarly, respondent #70 asserted that they saw technology as “*more gimmicks that remove the student even further from real “ands on” experiences on the stage*”. This also seems to come from Drama as theatre model but once again the respondent also responded that they agree they would like to learn more.

And a similar set of responses came from #73 who said “*My experience with technology is that it is very time-consuming. I would hate for it to take too much away from the human element that is the essence of drama.*” and also indicated a desire to learn more about technology. I am drawn to question this type of response in the light of Brad Haseman’s questions;

This question goes to the heart of what it is to teach drama at this point in history. What is it to teach students whose sophisticated redacting skills outstrip our own and who in many cases are better at finding information, and certainly forbidden information, than we are? What is it to ‘empower’ students when they are more skilled editors, especially when using digital technology, than their teachers? As a teacher am I destined to become an expansive search engine pointing students towards materials and discourses (with an increasingly short shelf life) out of which they can playfully edit there [sic] next collage performance? (Haseman, 2002 p.128).

Like many other drama teachers, I am concerned about the appropriateness of any engagement with technology. In order to identify appropriate forms of engagement and sound educational practice then it falls to some teachers to “test the water”. If we are too negative about the possibility of technology being a useful adjunct to drama

education then we run the risk of not seeing the possible benefits. If a teacher adheres too strongly to the idea of the “human essence” of drama as some immutable given, then one wonders what chance technology is really given to prove itself pedagogically?

It may be that one of the current functions of the drama teacher is to engage as a joint learner with students in a new paradigm.

Overall, the current view seems to suggest that there is both a desire and a need to incorporate further “technological” learning opportunities in the ongoing professional development of teachers and perhaps more importantly, establish such learning and exploration within the pre-service courses being offered at universities and colleges.

Chapter 6: Conclusions

As stated in the opening discussions in this paper, there seems to be little evidence about what it is that technology may add to or subtract from traditional practice in Drama education. After this study the questions still remain. What does seem to have been shown is that there is some division between the viewpoints of teachers.

It was expected at the outset that there would be a majority of teachers who would defend the position that Drama is best left untouched by technological intervention. The study has not shown this; but that is not to say that it is a glowing endorsement of technology as a panacea. Teachers are reserving judgement until such time as there is more evidence and a greater basis for making a judgement addressing the implementation of technology in Drama classes. What still remains unclear is who will be doing this investigation. One of the major absences in this paper is the evidence to support the positions taken by individual teachers in terms of pedagogy.

The study set out to examine attitudes and perceptions and to some extent it has provided some clear data but perhaps more importantly it will generate discussion and further investigation into the legitimacy of technology in Drama education. Those few voices that reflected the opinion that Drama is about people and interaction between and within people may well prove to generate the really compelling and challenging questions for future investigators.

Given those caveats, this study provides several preliminary findings:

1. In spite of the researcher's initial impressions this study seems to indicate that drama teachers surveyed generally believe IT will offer benefits to the field of Drama education and that students will gain better learning opportunities as a result of engaging with technology. There seems to be a healthy measure of scepticism that may eventually ensure that Drama remains the focus despite engaging with new technologies. Further, it is suggested by some respondents

that students will be disadvantaged if we do not adopt technology as a part of Drama education. There is evidence of concern that the nature of Drama education may be transformed by the introduction of new technologies;

2. A little under half of the Drama educators who responded are actually attempting the use of IT in their classes. These teachers were often making tentative exploration to discover the possibilities, while a few were actively embracing technology in their daily practice. There was some measure of scepticism about what technology has to offer the drama classroom on a daily basis. This is indicated as a combination of several factors –
 - a. some teachers see *no compelling reason to engage with technology*. These teachers were generally those who held to the strong belief that Drama is a “human” activity and that the introduction of technology will *dehumanise* it in some way;
 - b. others seem to feel their *skill base is not adequate* for such engagement. These teachers reflected the opinion that they did not have the training and experience to comfortably or confidently engage in meaningful drama activity that employs technology;
 - c. are *insufficiently resourced* to tackle such use. These teachers were of the opinion that the technology resources they have access to are inadequate to engage in significantly purposeful drama activities; and
 - d. others believe that there are *too many problems* inherent in doing so. These problems largely seem to be attributable to unreliable computers and equipment, or access issues within specific contexts;
3. Many teachers seem to believe that they do not have appropriate technology available to them. This is indicated by a very strong “disagree” response to

Question 4. However, approximately one-third of respondents believe the existing technology they have access to is sufficient. This may suggest that many educational environments are either deficient in their provision of resources or that Drama teachers generally are unaware of how the technology might be used in Drama. This may further point to concerns about whether or not administrators, curriculum leaders and managers in schools and institutions have a clear understanding of the shifting needs of Drama education. One possibility is that there is a dearth of exemplars upon which teachers can model their own practice. It is certainly my experience that trying to locate effective and appropriate examples of technology-integrated drama activities is a very challenging task;

4. In regards to professional knowledge about the use of technology there is a fairly even division between those who believe they are adequately informed and those who believe they do not currently have the requisite knowledge to engage with technology. Approx one-fifth of respondents suggested that they were uncertain if they had the knowledge or not. This might be interpreted as indicating that there is no clearly defined criteria for what constitutes “necessary knowledge”. This is one of several aspects of this study that indicate further investigation and experimentation is required in order to identify any technology competencies required by Drama teachers. This would seem to suggest that the next step within schools and learning institutions is for Drama educators to begin to establish and maintain strategic alliances with those that control the technology. In my own experience, I have found that teachers of computing and technology are often very excited by the creative demands which Drama makes of technology. If high order technology competency is required for any conceivable Drama undertaking it would seem sensible to turn to those who are already highly skilled in the setting up and use of computer systems;

5. The strongest indicators of attitude in this study were the three questions (Q7-Q9) relating to the perceived importance and benefit of technology in the context of Drama education. In all three questions there were clearly visible affirmations that respondents believe technology is both important and likely to be beneficial to Drama education and this reiterates the original impetus of this study. While I, and apparently a good many of the respondents to the survey, believe that technology has a great deal to offer Drama it would seem to be incumbent upon teachers to become investigators in the field, to undertake action research projects to clearly identify and demonstrate the strengths and benefits of such encounters with technology. In order to substantiate the belief we may well need to reconsider the entire paradigm of Drama education and its place within the curriculum;

6. Teachers would like more opportunities to learn about IT in Drama. This question was the most heavily indicated single variable, with nearly nine-tenths (87%) of all respondents indicating they would like to learn more about the role of technology in Drama education. This question alone seems to confirm that there is a genuine need to provide significant learning opportunities for practicing Drama teachers and to adequately prepare pre-service teachers during their studies. The logical extension of this is that once teachers are readily using technology in their classrooms the base level of knowledge will shift and students will graduate with both knowledge and expectations about the use of technology in Drama education.

Chapter 7: Stepping into the virtual

One of the emerging findings is that this study addresses the way in which people frame Drama in contemporary society.

Drama education is changing constantly, and perhaps at this time we are less certain than usual about the nature of the shifts that are about to occur in our practice. Perhaps, at a time when the technological competence and literacy (in specific contexts) of students accelerates beyond the investigations and practices being approached in school Drama, we can give consideration to the position taken by Brad Haseman that “*this question [the question of what] goes to the heart of what it is to teach drama at this point in history*” (Haseman, 2002 p. 128) and find solace in John Carroll’s assertion that

...digital performance is being created in the minds and computers of young online drama interactors, enhanced by digital imaging. It is going to produce some interesting notions of what constitutes dramatic performances in the future. It is drama teachers who are uniquely positioned within the school curriculum to begin to understand these emerging performance conventions and engage their students in role based drama that expands and builds on the current undeveloped play base enactment that is occurring (Carroll, 2002 p. 141).

Like most fields of study, Drama is subject to paradigm shifts and perhaps as we are in the early stages of such a shift this study is tentative in its approach and in any assumptions and conclusions it may draw.

It seems that a great deal more investigation is required before solutions are found to the numerous questions that are raised by this study. Some key questions and tasks await future researchers:

1. What are the key technology competencies required by Drama teachers?
2. What are the technology resourcing requirements that should be considered standard and basic for Drama education?

3. How can technology be best utilised to expand and enhance the scope and efficacy of drama education?
4. What training and education is required for new and existing Drama teachers in order that they can acquire the requisite competencies?
5. What mechanisms can be implemented to develop, archive and share exemplars of best practice in engaging technology in drama education?

The exploration must continue...

While the “real” exploration of the potential of the virtual in Drama education continues to be considered I think this forum’s theme of “Left Blank Intentionally” is a suitable metaphor for the current state of practice in the area of Drama and computers. It reminds us that our limited exploration to date is not an accidental omission; somehow we need to be certain that we have deliberately reserved judgement.

We do not know enough about the possibilities to be able to dismiss out of hand the learning opportunities that may exist by engaging with the new technologies. We are not yet able to engage in the totally immersive Virtual Reality of Lawnmower Man, Virtuosity and Johnny Mnemonic. We are not all the way there, but we have certainly begun the journey. We operate at the interface, we interact within the liminality of the interface, and we are in that “space” betwixt and between the virtual and the real. Our experiences of the virtual are still embodied in the present body. Despite the relocation of the “I” of the actor in role to a conceptual and negotiated “cyberspace”, the actor and indeed, any audience still experience the performance in the “real”.

I don’t think the use of computers in Drama has to be a daunting prospect. I think it unavoidable that Drama teachers must develop a wide range of technical

competence. We must be flexible in our thinking about what it is we do. We must learn to be wantonly curious about alternatives, about what are the positive outcomes. We must continue to negotiate with students to allow them to discover and explore their own abilities and interests through Drama. We have to broaden our scope – what are we really offering in Drama education – the future of computer games is going to be changed by those who understand dramatic narrative and can translate that into terms that Playstation programmers can work with. We need to be comfortable that sometimes the end point is not obvious; our work will sometimes have us stepping into uncharted territory. We need to document and share our experiences. We need to stay focussed on the positive (Flintoff, 2002a).

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Appendices

Appendix A - Survey format as presented on the Internet.



Drama Education

A Global Perspective - Learning in, with and through Drama.

Home

1. I have thought about the use of digital environments as part of my teaching strategy in Drama.

True (1)

False (2)

2. I have attempted the use of "digital" environments in my Drama class.

True (1)

False (2)

3. I feel I have the necessary knowledge to use "digital" environments in my Drama classes.

Strongly agree (1)

Agree (2)

Neutral (3)

Disagree (4)

Strongly disagree (5)

4. **I feel I have the necessary technical resources to use "digital" environments in my Drama classes.**

- Strongly agree (1)
- Agree (2)
- Neutral (3)
- Disagree (4)
- Strongly disagree (5)

5. **I am confident there is a positive use for "digital" environments in Drama education.**

- Strongly agree (1)
- Agree (2)
- Neutral (3)
- Disagree (4)
- Strongly disagree (5)

6. **I would never consider the use of "digital" environments in my Drama classes.**

- Strongly agree (1)
- Agree (2)
- Neutral (3)
- Disagree (4)
- Strongly disagree (5)

7. **I think knowledge and skill in the use of technology is essential for Drama teachers.**

- Strongly agree (1)
- Agree (2)
- Neutral (3)
- Disagree (4)
- Strongly disagree (5)

8. **How important is an understanding of the possibilities for technology in Drama education.**

- Very important (1)
- Important (2)
- Neutral (3)
- Unimportant (4)
- Very unimportant (5)

9. **I would like to learn more about the possibilities for technology in Drama education.**

- Strongly agree (1)
- Agree (2)
- Neutral (3)
- Disagree (4)
- Strongly disagree (5)

10. **Enter any comments you feel relevant to the topic, i.e. the use of "digital" environments in Drama education.**

11. **My teaching qualifications are:**

12. Email:

Submit response

Appendix B - Raw data as collected for questions 1-9

Data Row	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
3.	1	2	3	2	2	5	2	2	1
4.	1	1	4	4	1	4	2	2	1
5.	1	2	3	4	4	4	2	3	2
6.	1	1	2	2	1	5	1	1	1
7.	2	2	4	4	3	3	3	3	2
8.	2	2	5	5	2	3	2	2	2
9.	1	2	2	4	2	4	2	2	2
10.	1	2	4	4	2	4	2	2	2
11.	1	1	2	4	2	5	1	1	1
12.	1	2	3	5	2	4	1	2	2
13.	1	1	3	4	1	5	2	2	1
14.	1	1	2	2	1	5	2	1	1
15.	1	1	2	2	1	5	1	1	1
16.	1	2	4	4	1	5	1	2	2
17.	2	2	3	5	3	2	4	3	4
18.	2	2	4	5	4	2	1	2	2
19.	1	1	2	4	1	5	1	1	1
20.	1	1	1	1	1	5	1	1	1
21.	1	1	3	3	3	4	1	1	1
22.	1	1	2	4	1	5	1	1	1
23.	1	2	2	4	2	5	1	1	1
24.	2	2	4	4	3	4	2	2	2
25.	1	2	4	3	1	5	2	1	1
26.	2	2	2	4	3	2	1	2	1
27.	1	2	3	2	2	4	1	1	1
28.	1	1	4	2	2	5	1	1	1
29.	1	2	4	2	1	5	2	2	1
30.	1	2	5	2	2	5	3	2	2
31.	1	1	3	3	3	3	1	1	2
32.	1	2	4	4	2	4	2	2	3
33.	2	2	4	5	5	1	2	5	5
34.	2	2	3	4	2	4	2	2	2
35.	1	1	3	3	2	5	1	1	1
36.	1	2	1	3	1	4	1	2	1
37.	2	2	4	2	3	4	2	2	2
38.	1	1	5	5	2	4	1	1	1
39.	1	1	2	4	1	5	1	1	1
40.	1	1	1	1	1	5	1	1	2
41.	1	1	2	3	2	4	2	2	1
42.	1	2	2	1	2	1	4	2	1
43.	1	1	2	2	2	4	2	2	2
44.	1	2	4	4	2	4	2	1	1
45.	1	2	5	2	2	4	2	2	2
46.	2	2	3	3	4	4	2	2	2

47.	2	2	5	5	3	3	3	3	3
48.	1	2	2	2	2	4	2	2	2
49.	1	1	4	4	1	5	1	1	1
50.	1	2	3	4	2	4	2	2	2
51.			5	3	3	3	1	1	1
52.	1	2	3	2	3	4	2	2	3
53.	1	1	2	4	1	4	2	1	3
54.	1	2	4	4	2	5	2	2	2
55.	2	2	5	5	2	4	4	3	1
56.	1	1	3	4	2	4	2	2	2
57.	2	2	2	4	2	3	2	2	2
58.	1	2	4	4	2	4	2	2	1
59.	2	2	4	3	2	5	1	2	2
60.									
61.									
62.	1	1	1	2	1	5	1	1	1
63.	2	1	4	2	2	5	1	2	1
64.									
65.	2	2	5	5	3	4	2	2	2
66.	1	1	3	3	1	5	2	1	1
67.	1	2	4	3	2	4	2	2	2
68.	1	2	5	5	3	4	2	2	2
69.	1	1	2	2	2	4	2	2	1
70.	1	2	4	1	2	3	3	1	2
71.	1	1	2	2	1	4	1	1	2
72.	2	2	1	4	4	1	5	3	5
73.	1	2	5	4	2	4	2	2	2
74.	1	1	1	1	2	4	2	1	2
75.	1	2	1	2	2	4	1	2	1
76.	1	1	2	3	1	5	1	1	2
77.	1	1	1	2	1	5	2	2	1
78.	1	1	4	1	2	5	2	3	3
79.	2	2	3	1	1	1	3	3	1
80.	1	1	2	2	2	4	1	1	2
81.	2	2	4	4	3	4	2	2	1
82.	1	1	3	4	2	4	3	2	2
83.	1	2	3	3	1	5	1	1	1
84.	1	1	2	2	1	4	2	3	2
85.	2	2	4	4	2	4	1	2	3
86.	2	2	3	4	2	5	2	2	1
87.	1	1	4	4	4	5	1	1	1
88.	1	1	1	1	1	5	2	2	1
89.	1	2	4	2	2	4	1	2	1
90.	1	2	4	2	2	4	1	2	1
91.	1	1	2	1	1	5	1	1	1
92.	1	1	1	1	1	5	5	1	3
93.	1	2	2	4	3	4	1	1	3
94.	1	1	4	4	1	5	1	1	1

95.	1	1	4	3	2	4	1	1	1
96.	1	1	2	2	1	5	1	1	1
97.	1	1	2	2	2	4	1	2	2
98.	2	2	5	5	5	4	2	1	1
99.	1	2	5	5	2	5	1	1	1
100.	1	1	5	5	2	5	1	1	1
101.	2	2	5	4	2	5	3	2	3
102.	1	1	2	1	1	5	1	1	2
103.	1	1	2	4	2	4	1	1	1
104.	2	2	3	4	2	4	4	2	2
105.	1	1	2	2	3	5	1	2	2
106.	1	2	2	3	2	5	2	1	3
107.	2	2	5	5	2	4	2	2	1
108.	2	2	2	3	2	4	1	2	2
109.	2	2	4	4	3	4	2	2	2
110.	1	1	1	4	1	5	2	1	1

Appendix C – Tally of results from questions 1-9

TOTAL RESPONSES		104
QUESTION 1	TRUE	77
I have thought about the use of digital environments as part of my teaching strategy in Drama.	FALSE	27
QUESTION 2	TRUE	46
I have attempted the use of "digital" environments in my Drama class.	FALSE	58
QUESTION 3	STRONGLY AGREE	11
I feel I have the necessary knowledge to use "digital" environments in my Drama classes.	AGREE	30
	NEUTRAL	20
	DISAGREE	29
	STRONGLY DISAGREE	15
QUESTION 4	STRONGLY AGREE	11
I feel I have the necessary technical resources to use "digital" environments in my Drama classes.	AGREE	26
	NEUTRAL	16
	DISAGREE	38
	STRONGLY DISAGREE	14
QUESTION 5	STRONGLY AGREE	31
I am confident there is a positive use for "digital" environments in Drama education.	AGREE	51
	NEUTRAL	16
	DISAGREE	5
	STRONGLY DISAGREE	2
QUESTION 6	STRONGLY AGREE	4
I would never consider the use of "digital" environments in my Drama classes.	AGREE	3
	NEUTRAL	7
	DISAGREE	49
	STRONGLY DISAGREE	42
QUESTION 7	STRONGLY AGREE	46
I think knowledge and skill in the use of technology is essential for Drama teachers.	AGREE	46
	NEUTRAL	7
	DISAGREE	4
	STRONGLY DISAGREE	2
QUESTION 8	VERY IMPORTANT	43
How important is an understanding of the possibilities for technology in Drama education.	IMPORTANT	52
	NEUTRAL	9
	UNIMPORTANT	0
	VERY UNIMPORTANT	1
QUESTION 9	STRONGLY AGREE	52
I would like to learn more about the possibilities for technology in Drama education.	AGREE	40
	NEUTRAL	10
	DISAGREE	1
	STRONGLY DISAGREE	2

Appendix D - Comments provided by respondents to Question 10

Q10 *(Some responses appear truncated due to input limitations on the survey site – the data has been left with original spelling and other idiosyncracies)*

(Numbering indicates respondent by Data Row in the Raw Data – although this list indicates 110 respondents there were 4 null respondents to the survey and the Data Rows commence at Row 3 (Refer to Appendix B). Null respondents were deleted for earlier statistical descriptions but retained in the raw data. Responses shown here are as entered by respondents complete with typographical and grammatical idiosyncrasies. This question was presented as an optional element and not all respondents added a comment. This listing is the totality of responses to the question.)

6. Many teachers think Drama has no compatibility with technology-- but I have discovered many appropriate and exciting uses; and I'm sure there are plenty more... Considering the advances in Technical Theatre and computer use; we can't afford to keep our students in the dark about it-- more exploration is needed.
8. I believe drama is "two boards and a passion". I also believe with Aquinas and Aristotle that the ideal is one student and one teacher under a tree...not in front of screen with limited human interaction. I also believe with Aristotle that the purpose of drama is to "please and to communicate and not to teach moral lessons; which is best left to the class room and social sciences.
9. It is a sorely neglected area; but with training to combat fear and ignorance the possibilities are endless.
13. My theatre group is rehearsing a play about values. It's so called empty head theatre. We started with listing values that are important for the members aged 15-18 and are going to make a play for children. We started to tell stories in a chain so everyb
14. I am very keen to develop use of ICT in Drama; and try to use the internet; digital cameras; powerpoint; video cameras; stereos; and lighting during my teaching.
15. As a first year drama teacher who does not have her own classroom; yet; I have not had the opportunity to use as much technology as I hope to some day. I am still learning to use it myself; but know that what is out there is definitely worth exploring. The more we can know about anything; the better we can be and the better we can equip our students for the world they will be entering and competing in.

17. We are beginning to forget that the one most important component in theatre is people; not machines. Too many tech wiz's at my school want us to use it but don't have enough to go around AND when someone does use one of their magic machines it doesn't work. I'd rather just use the kids - they have more to say.
20. I use a digital camera; digital videography; powerpoint; video editing equipment both digital and non-digital; and word processing programs where digital imagery can be input. I think technology can only enhance the drama classroom.
22. I work in the NSW public system and have to fight for every dollar I want to spend on technology. When it comes to budgets; will they ever get that Drama does not stop at mask making. Yet; we are their first port of call when the school needs a p
23. I think teachers need to consider technology not just as a tool to enhance teaching in the classroom; but as a tool to enhance performance. Technology is growing in all areas of our world and if students can't apply it to their arts subjects as well; they may get left behind.
28. I am only just starting to dabble. I understand that 'digital' and other technological developments are becoming increasingly important within drama; theatre and education fields. I do not feel equipped to be able to use them that successfully within my teaching environments - but I am starting to play with very simple things. It is always about time - balancing the demands of the existing loads/environments whilst moving forward in positive ways . . . we have all heard these type of hurdles before. . .
31. "Digital environments" are only one aspect of technology and drama education. The rich possibilities of "embodied drama" must not be overlooked in exploring digital and technological possibilities. There needs to always be a partnership.
33. Drama is a celebration of humanity using our natural environment from which we are made. We are NOT a digital creation but a marvellous spirit comprised of water wind fire and earth. Our dramas should be about exploring and savouring these elements.
38. I have attempted to utilise basic chat technology and billboards to access artists through the Qld Theatre Co. but lack of fully operational technology is a huge problem and teachers and students need education to see this as a positive learning tool. A lot of time is wasted due to problems with school networks and computers crashing etc and students lose focus easily. they also tend to see it as a chance to muck around as most of them utilise this technology for entertainment at home to chat to their friends etc.

40. Stop using quotation marks around the word digital - it makes its use feel like a kind of gimmick. Digital environments in Drama education; both aural and visual are liberating and enabling.
42. My responses may be irrelevant as I live and work in Wales "old north.". I also teach Media Studies 14 – 18
51. I don't understand the term "digital" environment.
59. I think using digital and media technology is a great idea but due to lack of funds; equipment is hard to facilitate and you need to have professional development on how to work the resources.
62. In my experience once technophobes discuss the power of 'digital' they rapidly become converts.
65. I have recently retired; but when still in the classroom I was interested in technology in class. As a middle school teacher with limited resources and even more limited knowledge of the field I was "at a loss" about moving forward.
66. I use lighting & sound equipment during some lessons; and video and projector in past school production of Jesus Christ Superstar
69. I research in my becoming dissertation " The drama education integrated to the Media Education"
70. more gimmicks that remove the student even further from real "hands on" experiences on the stage.
73. My experience with technology is that it is very time-consuming. I would hate for it to take too much away from the human element that is the essence of drama.
74. I also enjoy analogue"mechanical"recycled technology working in conjunction within a "digital environment".
75. The internet is a ready resource for modern theatrical information. We use video production and multi-media in our performances. A knowledge of computer graphics is needed for poster design. Sound production technology "programs such as Sonic Foundry applications" are used to mix sound for productions. Technology is a must in the drama environment. It allows students to expand their knowledge and thinking; thus extending their experiences.

76. The term technology may be problematic within the Queensland context; where we use the term Information Communication Technologies. We are trying to differentiate these technologies from other technologies because we have a new Technology syllabus and we are trying to broaden out the notion of technology to include manual arts; design and home economics etc. I just thought you should be aware of this for your research.
77. The possibilities are great in this area but access and training will continue to be a problem ... almost insurmountable. The rate at which technology changes requires almost a full-time commitment. Considering a rear projection screen costs \$8000 and data projectors \$3000-\$30,000 who can afford to set up a system?
78. Important that it is there to support the significant learning of drama and not to drive it. Can enhance but doesn't have to be only digital.
81. I too am doing graduate work in the use of Information Technology in my teaching. So far; my opinion and experience is that IT is useful in supporting Drama learning for communication ie. email; producing newsletters etc. and in production work ie. producing programs and other imagery; internet research; and creating using presentation technology. As far as I can see; the actual process of teaching Drama is actually on the other end of the continuum from Virtual experiences. Yes we use our imaginations to create imaginary situations but we do it in real time with the other people in the same room and most of the best drama learning occurs because of that real contact between people. I don't really know what sort of "digital environments" you are referring to or how to use them in a Drama class but I am very interested in hearing your thinking in this area.
87. I'd also like to link media/film to drama and look at the possibilities of this.
88. I think we need to really consider how accessible such environments are to drama teachers in terms of hardware available in drama teaching spaces. No technology no access.
92. I have used technology in many of my drama classes; it helps today's technology saturated students respond to situations I give them in a more involved and positive way.
95. My desire to use technology often exceeds the resources and training available.
96. It is sometimes hard to book computer time for drama because people see it as "just drama". I've had other teachers cross out my bookings because of this. However; I believe digital environments go beyond a webquest on Shakespeare. The use of technology in actual performances is increasing;

and young people want to work with these technologies. That means that drama teachers need to be aware of the possibilities; and not be afraid to try new things.

99. Without the technology or access to it--usage is a moot point.
100. dramatized society versus flesh and bone drama, let's take screens on our side..
102. Digital environments and cutting-edge technology are vital to the updated teaching of drama. I have been able to "take" my kids to Greece to see the great theaters; "toured" some New York theaters; IM'd with a couple of working actors in New York; LA; and Chicago during my classes; and shown videos. All of these things were exciting for the kids and exciting for me. And on a side note; it made an impression on my students that I was as technologically literate as they were.
105. I feel that drama is so strongly practical and interactive that using a digital environment works best for research. I have started both a drama and a dance intranet site at the college where I teach and while they are still in their infancy; I can see potential.
107. Underfunding and a lack of facilities precludes anything like this. Because of this I haven't learned about it and therefore feel totally 'at sea' about all of it.
110. Already using webquests; internet research and interactive cdroms in both senior and junior drama courses to great success -- when the school computers are up and running and the techies have not removed my software. Also use digital technology for making drama in the form of Video production both Mac & PC.