Digital Apps and Learning in a Senior Theatre Class.

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Abstract

This qualitative case study, conducted by a teacher/researcher in her drama classroom, investigated senior theatre students’ interactions with applications (apps) in a secondary school environment. The data was collected through a range of qualitative methods. The analysis of this data was organised through three key approaches to the use of the app: (1) Tool led, which considers the affordances of mobile learning and the use of technology and apps for creative flow and reflection; (2) Pedagogy led, which considers the collaborative process, internalisation and Vygotsky’s Zone of Proximal Development; and (3) Sociomaterialism, which brings together apps, agency, and the real and virtual world. A significant finding is that mobile applications have broadened the students learning experiences beyond the constraints of the classroom and school timetable providing students with the opportunity to continue learning outside of the formal classroom environment, transcending space and time and extending their interactions with other students.
Declaration

This is to certify that:

(i) This thesis comprises only my original work towards the degree of Master of Education.

(ii) Due acknowledgement has been made in the text to all other material used.

(iii) This thesis is fewer than 22,000 words in length, exclusive of tables, maps, bibliographies and appendices.

Signed:
Acknowledgements

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Chapter 1 Introduction

1.1 Digital Apps and Learning in a Senior Theatre Class

My fascination with mobile technology began as a journey that stemmed from personal observations and experiences. In 2011 the Australian Government implemented a policy, initiating funding for a nationwide integration of Information Communication Technology (ICT) across the primary and secondary educational sectors. The Digital Education Revolution (or DER) “[aimed] to prepare students…to live and work in a digital world”. (DEEWR, 2011, p. 31). For many educators the DER resulted in the emergence of mobile handheld devices in the classroom, with both teacher and student left with little guidance as to how best integrate these new devices into their teaching and learning. As a result of this financial investment, mobile handheld devices appeared in my senior drama classroom. Since that time, I have come to question how teachers can make the pervasive existence of mobile technology meaningful within the drama classroom. While the Australian Curriculum doesn’t explicitly mandate the teaching of technology, the inclusion of ICT as a general capability ensures students have access to ICT skill development. Current technology is diverse and over the last decade has rapidly altered to now include: desktop computers, laptops, tablets (also known as Personal Handheld Devices or PHDs) and mobile technological devices such as smartphones, with the current generation of learners using mobile technology in their everyday lives (Vinu, Sheremin, and Reshmy, 2011).

In order to further develop an understanding of mobile technology and its impact upon twenty-first century learning, this research needed to delve further into the interactions and relationship between the device and the learner. Ally (2009) outlines that mobile technology meant learners did not have to wait for a certain time to learn, empowering them to study whenever and wherever they desired. He stated that the learner “can use wireless mobile technology for formal and informal learning”. (Ally, 2009, p. 1). No longer is the way in which students learn just about the interaction between the teacher and the student, and no longer is learning constrained to the formal classroom environment. Technology has altered the way in which society accesses information, how it communicates and how it interacts; the impact of this change within an educational setting is the core of my research project. This study was set up to observe
whether interactions with mobile technology and apps might alter or enhance the learning opportunities for students within a learning process; asking the central question:

What role can apps play for students in a senior theatre class?

Two further interrelated questions underpinned this study:

Do interactions with mobile technology and apps alter or enhance the learning opportunities for students in senior theatre classroom, and if so, in what ways?

To what extent do theatre students choose to use apps in the planning, development and presentation of their work?

Within this thesis I use the terms drama and theatre interchangeably. The students in this study were undertaking the Victorian Certificate of Education (VCE) study design of Theatre Studies. However, I refer to the work the students undertake as drama or theatre work, as drama is both a subject and a descriptive noun to indicate a body of performative, artistic studio-based work. In this way, drama is not being referred to as the subject ‘drama’, but as the activity. And I refer to my students as both drama and theatre students.

The research study occurred in an inner city girls’ independent school in Melbourne, Australia. I undertook a case study over a two-month period of time in a composite year eleven and twelve theatre classroom. In order for me to embark upon this investigation, I needed to position myself as the teacher/researcher, which enabled me to observe and reflect upon the actions undertaken by my students in my classroom (Yin, 2003; 2013). I could observe and question the choices and the moments, within a creative process, when my students chose to interact with technological devices to engage with their learning. The study focussed on the use of the app rather than the device itself because devices rapidly become obsolete, yet the use of an app is seen to be stable and developing (Banister, 2010; Sharples, Taylor and Vavoula, 2010).

I consider myself to be adept in the use of handheld devices and apps within the drama classroom. This school permits students in years ten to twelve to bring mobile devices into the classroom and for several years the senior drama students in my classroom have been using mobile devices within their drama lessons to interact with creative tasks. However, during the course of this study I did not request, suggest or impose the use of
apps to carry out any tasks, inside or outside of the classroom. The discoveries observed in this study stemmed from the students and their interaction with apps, and with one another.

1.2 Definitions of Key Terms

I will be using terms such as mobile technology, devices, Personal Handheld Devices (PHDs), smartphones and tools interchangeably to describe some of the technology that the students have used in this study. I have refrained from specifically identifying a brand of tool within the research project because the focus is on the way in which learners use apps on their devices, rather than the tools or devices themselves.

An application is more commonly known as an app. An app is described by the software company gcflearnfree (2008) as being “a type of software that allows you to perform specific tasks … When you open an application, it runs inside the operating system until you close it”. Apps are freely available on all the mobile technology listed above, however some apps are designed to have different capabilities and functionalities on a mobile device to their laptop or desktop counterpart. I identify specific brands of apps by placing them in italics.

Mobile or m-learning: defined “as a kind of learning model allowing learners to obtain learning materials anywhere and anytime using mobile technologies and the Internet.” (Ozdamli and Cavus, 2011, p. 2).

Pinterest: This virtual networking app allows users to visually share, and discover new interests by posting [or ‘pinning’] images or videos to their own or others’ boards. Users can either upload images from their computer or pin things they find on the web using the Pinterest bookmark.

WhatsApp: Is a cross-platform mobile messaging app…. [it] is available for iPhone, BlackBerry, Android, Windows Phone and Nokia … In addition to basic messaging WhatsApp users can create groups, send each other unlimited images, video and audio media messages. (https://www.WhatsAp.com)
The Victorian Certificate for Education (VCE): the official document awarded to secondary school students who successfully complete high school level studies (Year 11 and 12 or equivalent) in the Australian state of Victoria.

The Victorian Curriculum Assessment Authority (VCAA): the department responsible for the VCE assessments, exams and the conduct of statewide testing.

Theatre Studies study design: the curriculum documentation for the course of study for Theatre Studies at VCE level. A 'study' is broken up into four units numbered 1, 2, 3 or 4.

Learning Outcomes: Each student must achieve the set of learning outcomes for each unit as specified in the VCAA Study Design in order to satisfactorily complete or gain an 'S' (pass) for each unit.

The general term ‘Assessment Tasks’ (ATs) refers to all tasks awarded a grade from Units 1-4. For Units 3 and 4, the internal assessment is either a School Assessment Task (SAT) or School Assessment Coursework (SAC).

1.3 Structure of this Thesis

This thesis has six chapters. In Chapter 2, I present my review of literature, which contains three sections. In the first section I provide a preliminary focus on the affordances of mobile technology and explore research around m-learning, mobile technologies and their capabilities and how these tools are currently being used within the classroom, with a focus on the impact these interactions are having on learning. The second section shifts towards pedagogy and theories of social constructivism and with an understanding of mobile devices and their capabilities, I begin to further explore and consider in more detail the ways in which students gain knowledge. I consider the tools that they may use to develop learning through the constructivist lens with a focus on internalisation and Zone of Proximal Development, (ZPD) (Vygotsky, 1964). This section also examines the link between these technological tools and ZPD with particular reference to Koole’s (2009) mobile frameworks for learning. The final section moves into the theory of Material Semiotics or sociomateriality, (Law, 2009;
Fenwick, Edwards and Sawchuk, 2015). In this territory I begin to explore more specifically the relationship between the material object; in this case the app, and the learner.

In Chapter 3 I discuss the methodology chosen for my study. This includes my use of qualitative interpretive research and a case study approach. I position myself as teacher/researcher and outline my research approach and the appropriate processes and procedures I put into place to enable the study to occur. I also outline the data collection and analysis methods used.

Chapter 4 focuses on the discussion of my fieldwork and introduces the findings that emerged from it. Again this chapter takes the form of three sections. The first section considers the contextual information relating to the VCE Theatre Studies curriculum and my classroom curriculum design and sets the scene for the research project. The second section takes a week-by-week format and brings the reader inside the classroom during the first part of the study. I discuss the observations made by the researcher during the teacher-led workshop phase of curriculum design and how my students responded to tasks. It was during this phase that emergent themes began to be observed and this shapes the discussion in the subsequent section. The final section picks up on these emergent themes and takes the reader further into the classroom aligning some findings to the conceptual framework of the three approaches to learning, as introduced in my literature review. It is here I discuss these emergent themes and some key findings in more explicit detail.

In Chapter 5, I outline some of the new knowledge that has been uncovered under the following headings:
The Use of Apps in the Real or Formal Environment: including findings around tools for creative flow and tools for reflection.
Convergence: The App, Agency and Affordance: a discussion based on the choices students make when interacting with apps and who is leading these choices.
Convergence: Apps Used in the Virtual or Informal Classroom: a reflection of the findings on democracy in the virtual space, space and time, collaboration and ZPD.
Chapter 6 is the concluding chapter and contains a review of key discoveries and recommendations for further research.
Chapter 2 Review of Literature

2.1 Review of Literature

This study focuses on understanding how students use apps within a senior theatre classroom and to investigate how these apps might alter or enhance their learning experience. Underpinning the literature review is the central key principle of how students learn. In order to explore this I have positioned myself as a Social Constructivist. The work of John Dewey (1916; 1933; 1934; 1985) as a pre constructivist, and Lev Vygotsky (1964; 1978; 1980) as the seminal figure in social constructivism have informed this work, and are discussed here.

Within this review there are three dominant fields of literature that my research questions prompted me to pursue. The first is the current emerging literature around mobile technology moving toward the use of m-learning within the classroom. The second is the more fundamental literature that informs learning and as my work as a drama educator is in the social constructivist mode, I have focused on drama education in this paradigm. This section also includes recent literature into the use of technology apps in the classroom. The third is a review of the Actor Network Theory or ANT (Latour, 1992), and the emerging field of Sociomaterialism (Fenwick and Edwards, 2010; Fenwick et al., 2015), which enables understanding to be drawn from human interaction with material objects. The review highlights the relevant findings of these studies that link to my own research study, while also demonstrating the gaps in the current literature.

2.2 Tool Led

This section places the focus on literature surrounding mobile devices and how this technology is being used within education and the drama and creative arts classroom.

Technology in Education

In 1916 when Dewey wrote Democracy and Education, the industrialised world was undergoing huge technological and social disruption.
A society which is mobile, which is full of channels for the distribution of a change occurring anywhere, must see to it that its members are educated to personal initiative and adaptability. Otherwise, they will be overwhelmed by the changes in which they are caught and whose significance or connections they do not perceive. (Dewey 1985, p. 88)

Nearly one hundred years since Dewey wrote this, society finds itself currently experiencing comparable social and technological disruption, with the Internet and mobile technologies providing significant change to the way in which members in society conduct their lives (Rizvi, 2012; Vinu et al., 2011; Hylen, 2012). In 2001, Prensky labels the generation of school learners as ‘digitally native’ having spent their entire lives surrounded by and using tools of the digital age (p. 6) and Wright explains the use of technology within the classroom as both pervasive and ubiquitous (Wright, 2001). Oblinger, Oblinger and Lippincott (2005) describe the digital native learner as the ‘net generation’ and consider them to use mobile devices as part of their everyday daily routines. Prensky’s (2001) stance assumes the digital native generation to have a tacit understanding of how to use technology, causing significant debate amongst many researchers and critics (Bennett, Maton and Kirven, 2008; Bittman, Rutherford, Brown, 2011; Sánchez, Salinas, Contreras, Meyer, 2011). Buckingham (2007) (as cited in Anderson, Carroll and Cameron, 2009) is one of the most prominent critics of this digital native argument, while he doesn’t deny that the current generation possesses sophisticated technological skills, he considers that it is educators who do not have the capacity to cope with the diversity of, and learning preferences offered with technology (Anderson et al., 2009, p. 8). Berry (2006) claims mobile technology to be “disruptive…challenging the conventional practices of educators” (p. 150). This fear is further reiterated by Bennett et al. (2008), stating education to currently not be equipped to support the use of mobile technology to aid learning. These voices of caution, implore the need for more research to capture how the current generation of students interacts with mobile technology within the classroom, and how these exchanges might impact upon the way in which they learn.

In 2007 research undertaken by Song contemplates the use of PHDs in the classroom. She lists the constraints of having a small screen size and limited battery life as two reasons why “[PHD] technology is not yet advanced enough [for them] to be a viable option in the classroom” (p. 42). By January 2010 Apple© produced its first generation of the iPad. This mobile device resolved the previous constraints and concerns mentioned in Song’s research and appeared to offer a portable alternative to rival
desktop and laptop computers (Melhuish and Falloon, 2011). Considerable research has focussed on the need to go beyond the digital native debate and develop a more sophisticated understanding of students’ experiences with technology (Bennett and Maton, 2010).

**Technology in Drama Education**

The successful relationship between drama and technology has been well documented with Carroll in 2002, urging drama educators and practitioners to take note of the powerful interactions occurring in the classroom between drama and digital media technology. Carroll (2002) further proposes the term multimodal literacy, a phrase he uses to explain the design of discourse (Carroll, 2002; Hobson and Jensen, 2009; Jensen, 2008). Jensen (2008) judges that the use of these literacies in the drama classroom promotes interaction including: play, performance, simulation, appropriation and the sharing of knowledge (p. 23). Hobbs and Jensen (2009) also recognise that multimodal literacies “encourage students to learn research skills, technical skills and develop an aptitude for analysis and reflection.” (p. 9). Taking a closer look at technology in the drama classroom, examples can be found where the stimulus and pretext is introduced through a range of digital technology (Anderson et al., 2009; Carroll 2002; Carroll et al., 2006; Cameron, 2009; Carroll and Cameron, 2003, 2009; Macy, 2013), how affinity or cyberspaces are used to stimulate play and interaction (Anderson et al., 2009; Davies 2009; Cameron and Anderson, 2009) and how responding and documenting of creative work utilises technology (Cameron, 2009; Raphael, 2009; Wotzko, 2012). Anderson (2011) believes that “Drama is one of the best sites in the curriculum to engage student creativity with digital technology” (p.17). He further analyses creativity to be mediated both through technology, but also in learning and teaching in drama.

In 2009, Raphael investigates the integration of virtual technology within a learning environment as part of a Drama Australia VINE project (2009). This research successfully explores a design for learning introducing blogging as a means for students to record, share and reflect upon a creative process. The documenting of reflective thinking in drama has traditionally been through the use of written journals or visual diaries. Raphael (2009) notes the positive relationship the current generations has with internet-based writing, and the ease this transfers to the use of blogging to reflect upon their creative process. Reflection is one of the key indicators that enables individuals,
and then groups, to build and develop their learning, which Taylor, Marinenau and Fiddler (2000) regard as one of the important ways an educator determines understanding. In 1933, Dewey wrote *How We Think*, where he defines reflection as the “active, persistent, and careful consideration of any belief or supposed form of knowledge.” (p. 9). Dewey (1933) makes the key point that an informed action follows the reflective thinking process, which leads to more ideas and generates more experience on which to reflect. Raphael (2009) considers the student’s involvement in the “busyness and excitement” (p. 149) of the creative process of performance making, and how this limits time for extended contemplation and reflection on the work they are undertaking. In her case study the use of blogging technology encourages reflective thinking (Raphael, 2009). While the emphasis of Raphael’s (2009) research is not specifically on mobile forms of technology, she explores the use of web 2.0 technologies within the drama classroom and provides examples of interaction with technology. Her research shows that the use of technology can extend the dramatic life beyond the classroom, taking drama tasks into “affinity spaces” (Anderson and Cameron, 2013; Cameron and Anderson, 2009; Gee, 2005). In 2010, Prensky adjusts his opinion, advising that schooling and teaching must change to accommodate the newer, more mobile forms of technology (Prensky, 2010).

**Mobile Learning**

McNaughton and Light (2013) identify that global access to information and mobility of knowledge is causing the entire world to respond to a technological move towards mobile learning. Cochrane and Bateman (2009) defined mobile learning or m-learning as handheld technologies, together with wireless and mobile phone networks which facilitate, support, enhance and extend the reach of teaching and learning. Korucu and Alkan (2011) explain that terms like spontaneous, intimate, situated, connected, informal, lightweight are among the terminology of m-learning (p. 1927). Vinu et al. (2011) consider m-learning to have significantly altered the learning experience for those in the classroom

[m-learning] has shattered the requirements for students to be seated for lengthy periods at a given time and place … moreover, wireless network access to the Internet increased students’ mobility because it allowed them to carry their laptops around.

(Vinu et al., 2011, p. 3069)

Vinu et al. (2011) curiosity lies in the notion that a portable learning device renders the technology invisible within the classroom. In their opinion this invisibility enables them
to be utilised anywhere, anytime, increasing the flexibility in how they can be used and enabling greater freedom for interaction than their desktop counterparts. In the same year researchers Melhuish and Falloon (2011) examine in more detail how learners engage with mobile devices. They conclude that mobile device usage can be broken into five distinct affordances for education:

1. Portability;
2. Affordable and ubiquitous access;
3. Situated ‘just-in-time’ learning opportunities;
4. Connection and convergence;
5. Individualised and personalised experiences;

(2011, p. 4)

It is these affordances that become central in developing an understanding of how mobile technology operates within the classroom.

**Mobile Learning in the Creative Classroom**

Anderson and Cameron (2009) in Anderson et al. (2009), discuss the use of mobile technology in the drama classroom and respond to claims surrounding the smartphone. They agree that the various capabilities offered within one flexible mobile device render it “potentially the most powerful technological tool for learning currently available to educators.” (Anderson and Cameron, 2009, p. 15). There is ongoing research that follows how students are using mobile tools within the drama and performing arts classrooms to creatively engage with tasks. In 2008 Dale’s investigation strongly links the current generation use of mobile devices (in this case iPods) in their daily lives, to what is happening in his classroom. In this study he found that when students interacted with an iPod, the device stimulated their creativity. Creativity in his study was associated with play, novelty, flexibility and deeper learning experiences. The use of the device in this context enables the learner to continuously interact with their creative process aiding their creative flow, in this instance ‘flow’ can be described as “a source of energy that focuses attention and motives the action” (Csikszentmihalyi, 1997, p.141). Dale (2008) claims that as a result of students engaging with these devices in their everyday lives, they are able to shift their use into the classroom and concludes the links between this technology and creativity to be strong (Dale, 2008).

Similarly, Banister (2010) looked at the evolution of iPod to iTouch. It was this tool and its introduction to apps that enable the learner to share content, collaborate with others, as well as work independently, which proved to be of interest. Banister (2010) questions the emergence of the app and how it seems to alter engagement with technology, which
he believes opens a new phase for technological and learning advancement. He discusses the many apps available and claims that the situated nature of the device and apps enhances the learning experience across a broad range of age groups and subject areas. Banister (2010) concludes that as “we move ahead to further define twenty-first century models of education, surely these mobile devices will play a significant role.” (p. 130), offering further suggestion of a strong link between mobile devices and the learning experience.

Researchers McNaughton and Light (2013) reflect upon the swift progression of handheld technology through the early part of this century, referring to the period as a ‘mobile technology revolution’. They conclude similarly to Anderson and Cameron, (2009) that smartphones and PHDs are being marketed to emphasise that all possible single tools can be replaced by one user-friendly device, with the addition of several apps. In more recent research, Anderson and Cameron (2013) in Anderson and Dunn (2013) consider that the use of an app means that the learner has access to connect to a diverse range of capabilities.

**Mobile Learning and Apps in Education**

Cochrane and Bateman’s (2010) research looks further into the affordances of Mobile web 2.0, with particular focus on the smartphone. These researchers also consider the pedagogical integration of new technology into a curriculum requires a paradigm shift on behalf of educations, which Hameed and Shah (2009) describe as a ‘cultural re-alignment’. Sharples et al. (2010) consider that if devices are introduced to the classroom with a specific intention, they become powerful gateways into learning. Conversely, Cochrane and Bateman (2010) claim that many m-learning scenarios are serendipitous rather than planned by the lecturers and reinforce the idea that these unplanned happenings may have the most significant impact on students’ learning.

Ravencroft (2000), (as cited by Sharples etc al., 2007) also consider the most successful learning outcomes to occur when the learner is in control of the activity; when they can test ideas by performing experiments, asking questions, or collaborating with other people to seek out new knowledge and plan new actions.

Editors Sharp and Beetham (2013) reflect on the multiple tools used over time in the classroom, including the most recent ‘human ingenuity’ of digital technology. They believe that none of these tools have “changed human beings fundamental capacity to
learn” (p. 5), but declare that the inclusion of digital technology has altered how ideas and practices are communicated within the classroom (Sharp and Beetham, 2013). These researchers also recognize the requirement of a paradigm shift for teachers to re-evaluate their design for learning. Anderson (2014) reiterates the position that perhaps teachers forget that these tools and technology in general, can be part of a range of strategies to enable and enhance learning, rather than the only way, leading this review towards addressing the subject of pedagogy and learning with the tool.

2.3 Pedagogy Led

This part of the literature review emphasises both the pedagogy surrounding the drama classroom as well as literature surrounding the practice of imbedding technology within the learning environment.

Social Constructivism

In 1938, Dewey offers an early version of constructivism whereby he considers “[That the] meanings of such things is derived from or arises out of the social interactions that one has with the others socially.” (p. 69). Piaget’s (1953) theory of constructivism relies heavily upon understanding how individuals interpret knowledge. Conversely Vygotsky’s (1964) opinion is that variables such as social interaction affect how an individual acquires knowledge. He further considers the process of internalization to occur more effectively when there is social interaction. One of Vygotsky’s key theories is the Zone of Proximal Development (ZPD) or the zone where learning occurs, which is defined as the gap between what a learner is currently able to do and what they can do with assistance from others (Vygotsky, 1964). Vygotsky’s (1964) theory on social constructivism acknowledges that it is through social interaction and organized activities that the ZPD extends. This theory also supports the use of mediation. Mediators help people to alter their environment and provide a way in which to interact (Vygotsky, 1964). Koole’s (2009) communicates a mode of learning to frame the imbedding of mobile technology within the classroom. In Koole’s (2009) framework the mobile device (or mediator) is given equal footing to learning and the social processes.
Figure 1. Koole’s model for framing mobile learning (2009, p. 27)

This visual image illustrates the convergence of mobile technology, human learning capacity and social interaction. Here Koole (2009) acknowledges that learners may move within different physical and virtual locations, to participate and interact with people, information, and systems anywhere, anytime (Koole, 2009, p. 27).

**Social Constructivism in Drama Education**

According to Vygotsky (1964) not only should student’s work with the teacher to develop deeper understanding, but also in collaboration with one another because an individual’s zone can be further extended through interaction or cooperative learning. Smith and MacGregor (1992) define collaborative learning as “joint intellectual efforts by students” (p.1). According to Panitz (1996), the underlying premise of collaborative learning is based upon consensus building through cooperation with group members (p. 1). Vygotsky (1978) states that “what a child can do in a group today, tomorrow he can do alone.” (p. 41). Ashton-Hay (2005) claims that learning in drama enhances collaborative skills, engages multiple intelligences and also increases the power of reflection in constructing knowledge. All of these attributes contribute to the power of drama in engaging all learning styles.

The social constructivist paradigm has dominated research into drama practice in education since the mid twentieth century (Perry, 2010). Wagner (1998) (as cited in Macy, 2013) interpreted the work of Vygotsky specifically in relation to drama in education. Wagner (1998) discusses how “Vygotsky saw cognitive growth as dependent upon interactive play”. (p. 20). According to Wagner (1998), Vygotsky’s work shaped the foundation for using drama in the classroom and Wagner further links the social nature of learning to drama:
spontaneous dramatic play … and teacher-led drama in the classroom are both powerfully social acts and both engage children in learning in their ZPD. (Wagner, 1998, p. 21).

Dewey (1934) (as cited in Nicholson, 2011) recognises that working together artistically can create a democratic space for learning and that this collaboration is an essential skill required for learning (p. 41). Anderson (2011) believes it is pivotal for a teacher to structure collaboration and that a culture of collaboration takes active structuring and engagement (p. 75).

Mobile Devices and Learning with Apps

Laurillard (2013) as cited in Sharpe and Beetham (2013), believes little has altered to challenge fundamental understanding of what it takes to learn in formal education, claiming the theoretical approaches of Dewey and Vygotsky to still be relevant (p. xvi). She considers pedagogy to still be seen as guiding the learner to learn, and that the emphasis remains on the pedagogy leading the use of technology, rather than adapting to what technology offers (Laurillard, 2013, p. xvii). Sharples et al. (2007) believe that “in order to understand how people learn though mobile technology, there is a need to understand the implications of learning with mobile technology.” (p. 234). Sharpe and Beetham (2013) further identify the close relationship between pedagogy and the technologies of learning.

In 2014, Amry investigates the learning achievements and attitudes a group of female students had with the social networking app WhatsApp. In this case study Amry compares two groups of students, both of whom were taught the same material, one taught exclusively through the virtual space of WhatsApp and the other through formal face-to-face teaching. Amry (2014) concludes that because WhatsApp enables the delivery of the learning content to be distributed in a range of different ways, it appears to “make the learning easy”. (p. 128). The findings suggest the capabilities of this app favoured problem solving and resolved learning difficulties experienced by the participants. The interactions with WhatsApp enable “collaborative, networked and portable processes to occur.” (Amry, 2014, p. 132). The results of this study conclude that WhatsApp facilitates “increasingly different types of learning [to] happen outside of the classroom through social interaction between students to improve construction and knowledge sharing.” (Amry, 2014, p. 134). These results also suggest WhatsApp made the learning more personal and that individual knowledge was increased due to online
social interactions, concluding *WhatsApp* to have a positive impact on learning.

Researchers Melhuish and Falloon (2011) also recognise the importance of the mobile device in terms of individual learning potential. Traxler (2009) claims devices allows personalized learning and “recognises diversity, difference, and individuality in the ways that learning is developed, delivered, and supported” (p. 263) identifying the ability for an individual to tailor an app to suit specific goals and purposes, which can assist their personal learning journey (Traxler, 2009, p. 264). Laurillard (2002, 2013) believes that digital technologies trigger a different kind of relationship between the teacher and the learners, influencing the need to continue to rethink the style and scope of pedagogy as the digital age continues to throw up new technology-driven challenges and this introduces the next phase of the literature review.

### 2.4 Sociomateriality

To further comprehend the complex network of relationships and interactions between teacher, learners and mobile technology there becomes a need for this study to address the Actor Network Theory (ANT) and those who have applied this approach within the field of education.

**ANT in Education**

ANT is a disparate family of material-semiotic tools, sensibilities and methods of analysis that treat everything in the social and natural world as a continuously generated effect of the webs or relations which they are located … these relations include objects, subjects, human beings, machines, animals, “nature” ideas, organizations, inequalities, scale and size and geographical arrangements. (Law, 2009, p. 141).

When writing about ANT, Law (2009) considers the focus should not specifically be on the learner nor the object (known in ANT as technologies) but the interaction between these, to advance the knowledge. (p. 148). The ANT approach questions how associations form, become durable, change or disappear, observing these interactions to directly affect the quality and efficiency of learning (Law, 2009). In comparison to other studies of profession practise, Fenwick (2015) in Fenwick et al. (2015) maintains the slow uptake of ANT within the field of education research to be expected. The educational origins of ANT lay in the field of science and technologies studies, with the likes of ‘actors’ such as Bunsen burners, chalk and textbook, being used to dissect the
complex webs of networks and interactions between humans and these such objects (Fenwick and Edwards, 2010, p. 71). Bigan (1998) set out to use ANT in explaining the process of attributing computers to enhance learning. Kress (2003) uses ANT to justify the activity of online discussion groups’ and how these interactions contribute to learning. More recent educational researchers turn to ANT to consider the building of knowledge through educational resources (Fenwick and Edwards, 2010, p. 73). The relationship between the student and the device and the relationship between the teacher, student and device must be examined and all be treated as an integral part of the learning process (Law, 2009).

Traxler (2009) also suggests that much can be learned from how the relationship in the classroom has developed with handheld devices. He considers that by reflecting upon practice and pedagogies used in technology enhanced learning in the classroom, community and educators can begin to develop a greater understanding of how these relationships can affect an educational environment. According to this view, learning “is about what we will refer to as the socio-material.” (Fenwick and Edwards, 2010, p. 4). Further, they make a case that “pedagogy centres around, and is constantly mediated by, material things.” (Fenwick and Edwards, 2010, p. 5). In addition Sorensen (2009) places the “human not above materials … but among materials. These materials may be used by humans, but they may also use the humans and influence and change the educational practice” (Sorensen, 2009, p. 2). ANT theory has been used to understand the complexities of these interactions (Sorenson, 2009). In chapter 5 of ANT in Education, Fenwick and Edwards (2010) argue that by engaging understanding towards the ways in which educators use technology as tools, observations can be made to understand how technologies can influence behaviour and affordance (p. 54). Fenwick and Edwards (2010) remind us that Law and Collins (1992 p. 4) as cited in Nespor (2010) argue the success of a technological project rests on three things, the third being that the device can impose itself as an obligatory point of passage between two networks (Fenwick and Edwards 2010, p. 72).

ANT offers critical consideration of ways technologies can be positioned in a classroom. Goodyear and Carvalho (2013) research observes educators offering learners the use of iPads to facilitate learning. They identify that learning and the things that influence it are seen as connected in webs, which cause occurrences, these interactions have consequences for explaining and analysing what learning has happened. In this
research the term affordance is considered as one way of explaining these occurrences (Goodyear and Carvalho, 2013). This research debates the subject of the object having affordance that shapes the human behaviours of those who encounter them (Laurillard, 2013). In this case they argue that rather than insisting on their being a primary of either affordances or interpretation in explaining relationships between material objects and human activity, they make a case that both play a role (Goodyear and Carvalho, 2013, p. 55).

**ANT, Agency and Translation**

Callon (1986) explains the process that allows a network to be represented by a single entity of either an individual or another network, as translation. He further summarises translation to have four moments or phases: Problemization; Interessement; Enrolment; Mobilisation (Callon, 1986 p. 19-34). Bird (2009) further explains the webs or networks, interactions and the relationship between ANT and agency, drawing from the work of Latour (2005). Here Bird (2009) explains that agency is “thought of in terms of humans making conscious decisions to exert influence.” (p. 5). Bird (2009) claims that in the case of a human and technological device, the object can exert an agency, implying that a technological tool could influence how humans perform certain tasks. The relationship between the device and the human becomes complex and Fenwick and Edwards (2011) consider the entanglement between the networks of computing in reference to education. They question how these networks occur through various spaces, various pedagogical relationships and identities. Their research study finds that by close examination much can be learned from understanding how these networks foster relationships and interactions particularly between the device and the learner (Fenwick and Edwards, 2011), leaving the field of research open for more studies within education to observe these interactions and how they impact upon student learning.

**ANT and the Virtual Space**

Drawing on ANT, Fenwick and Edwards (2010) begin to explain the way in which social networking and their “different configurations [can] work to produce differing knowledge generation” (p. 71). The analysis of how these configurations or webs influence knowledge can begin to explain why these tools are increasingly popular in education, yet research in this specific field is still in its infancy. Traxler (2009)
proposes that mobile technology clearly supports the transmission and delivery of multimedia content (as discussed in the tool led section). His research considers the idea of discussion and discourse, through both real and virtual time, and the transcendence of place and space through the use of voice text, social networking and multimedia (Traxler, 2009). Traxler’s (2009) concludes that placing the device within a situated learning environment enables the observer to recognize how the individual might use a device to respond to their work, further identifying an educational understanding that learning could take place in a wider social context. Additionally, in Traxler’s opinion these virtual (or informal learning) spaces that technologies such as social networking sites create, enable students to take their learning outside the formal classroom environment and extend the time they have learning, believing these virtual spaces to be powerful places for learning (Traxler, 2009). Much can be discovered as to how these affinity spaces (Gee, 2005; Cameron and Anderson, 2009) foster and inhabit learning (Traxler, 2009). Using Actor Network Theory opens a gateway to understanding how learners engage with material objects, and the ways in which mobile technologies provide possibilities for learning by offering endless reconfigurations of space and time (Laurillard, 2013).

2.5 Summary of the Literature Review

The relevant literature on mobile learning provides an understanding as to some of the reasons why mobile devices and apps are attractive forms of technology to the current generation of students. The research and literature into the field of apps in education, more specifically in drama education is still an emerging field. There are gaps in published research on how student are interacting with this form of technology in the primary and secondary education sector. However, findings from Cameron (2009) and Cameron, Anderson and Sutton (2012) state there is promising news about the participation rate and skill of educators prepared to venture into the field of drama education and emerging technologies with the latter claiming that “There is now a body of teachers, researchers and applied theatre practitioners experienced in making the interactions between drama and technology productive”. (Cameron et al. 2012, p. 469), which is promising news.

The literature I have reviewed here outlines how society interacts with mobile technology. It identifies the affordances of mobile learning, and offers explanation on
how mobile learning can be used to break down the barriers of time and space, to conduct business, to socialise and to connect with one another in virtual environments. This provides insight as to how learners may interact with these same pieces of technology within the classroom environment. The lens of social constructivism informs the behaviour of collaboration and interaction in learning and is essential in developing and extending our knowledge of this theory and how it is used with drama education. The world of Sociomaterialism and ANT is the realm where these ideas converge and although this field is limited with its literature in the context of drama education, it is within this world that the journey towards understanding the relationship between mobile devices, the learning context and the current generation begins. In the next chapter I discuss the chosen methodology for this research investigation and data collection methods.
Chapter 3 Methodology

3.1 Methodology

In this chapter I outline the qualitative research methodology and method I have used in my study (Denzin and Lincoln, 2011; Flick, 2013; Miles and Huberman, 2005; Patton, 2002; Yin, 1984). I discuss the adopted position of the teacher/researcher and how positioning myself as a researcher, investigating learners in my own familiar setting, assisted in understanding the creative process of my students. I also discuss the nature of qualitative interpretive research and the choice of using a case study approach within a naturalistic classroom inquiry (Strickland, 1988). Further consideration is given regarding the size and scope of the study and I describe the data collection and data analysis methods used and the types of knowledge that is generated through collecting data and analysing it.

3.2 Qualitative Research

My research project takes a case study approach, which is grounded in qualitative interpretative research (Denzin et al., 2000; O’Toole, 2006). Denzin and Lincoln (2011) explain that qualitative researchers are committed to the “naturalistic perspective and the interpretive understanding of human experiences”. (p. 5). As Yin (2014) discusses, this type of research endeavours to enhance knowledge through firsthand experience, reporting, and quotations from real conversations and aims to comprehend how “the participants derive meaning from their surroundings, and how their meaning influences their behaviour.” (Yin, 2014, p. 5). I chose a qualitative research approach because my study was centred on the observation of a group of participant school students in a single site, over a two-month period.

3.3 Case Study Methodology

Yin defined case study methodology as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used.” (Yin, 1984, p. 23). Leedy and Ormrod, (2001) as cited in Yin, (2003) explain case studies to be useful for “discovering little or poorly understood
situations” (p.149). In this research project the drama class has become a bounded case study and the participants within the study represent insights that might be generalised across the whole case (O’Toole, 2006). Taking a bounded case study approach enables observations of the behaviour of the participants to be considered representative and to draw some conclusion around their behaviour. A case study approach is useful because as a researcher I am investigating student engagement with various tools and the impact these interactions have on their learning experiences (Yin, 2003, p. 4).

3.4 The Role of the Teacher-Researcher

Teacher-researchers are interested in improving educational practices within their own environment. Stickland (1988) describes this process as teachers undertaking research in order to gain a better understanding of events in their own educational setting. Maclean and Mohr (1999) claim “Teacher-researchers raise questions about what they think and observe about their teaching and their students’ learning.” (p. ix). Cochrane-Smith and Lytle (1990) consider that teacher-researcher is able to think about the questions posed, document the observations, analyse and interpret the data, putting themselves in a position to share the results with other teaching professionals. These kinds of investigations work better if they are experienced through a naturalistic mode of inquiry (Strickland, 1988). Positioning myself as a teacher/researcher enabled me to investigate learners in situ, in my own school environment.

3.5 The Scope of the Study

This study was set up to observe if the use of mobile technology and apps might alter or enhance the learning opportunities for theatre students within a two-month learning process. The scope of the study was to focus on observing the theatre students in lessons, over this period. The participants’ interactions with the theatre tasks, the mobile device and apps and with one another was to be observed. The process of the interactions was to be examined to provide insight and broaden the
researcher’s understanding of the use of apps for consistency within the drama classroom.

The Size of the Study.

Participation in this study was voluntary, and was drawn from a composite class of twenty-two year eleven and twelve VCE Theatre Studies students, from a single-sex Independent girls’ school in Melbourne, Australia. As outlined in the introduction the use of mobile technology is already a familiar tool within the drama classroom, and one of many tools that students use within their creative process. The students in this study have complete freedom and choice as to how and when they may use their mobile devices or any other technology within lessons. I did not request, suggest or impose the use of any apps in the duration of this study. The discoveries observed stemmed from the students and their interaction with apps, and with one another.

The Main Informants

I refer to the students in the case study as participants. The decision as to who became my main informants was based upon data analysis and the interactions with mobile technology. The main informants were those who were displaying some of the more common and consistent themes as well as those who were doing something different. The four main informants I chose to focus on were:

- ‘Rachel’ an English as an Additional Language (EAL) student. She owned a different smartphone/device from any other student.
- ‘Catherine’ was identified as a participant who prior to undertaking this study had never considered using mobile devices as a learning tool, but who keenly adopted and used apps in every aspect of her work.
- ‘Imogene’ was identified at the beginning of the process as a keen user of mobile devices and was the only participant in the questionnaire who considered there to be a value in using mobile devices as a learning tool.
- ‘Kelly’ was resistant to the use of technology and identified in the questionnaire and interview that she did not consider mobile technology to be helpful as a learning tool.
The Dependant Relationship

The participants had a dependent relationship with the teacher/researcher, which is due to my position of being both the researcher and the teacher of the class. Measures were taken to ensure and protect all parties involved in the study. The research was undertaken as part of the regular school curriculum and there were no additional or separate tasks required for the participants of the study. Students and parents were informed in the Plain Language Statement (Appendix 1 and 2) that the decision to accept the invitation to participate in the research project was entirely voluntary, and regardless of whether or not they accepted the invitation, the student’s decision would in no way affect her assessment in the subject under investigation.

Ethics

I conducted my study in accordance with ethical guidelines, which I made clear to all participants from the outset. All the class members were invited to volunteer for the study and all were informed of the aims of the project. I gained permission from the parents of ten students (of the twenty-two in the class) who agreed to participate (Appendix 3). I also gained permission from the school to undertake the study as well as completing the ethics documentation required by the University of Melbourne. Owing to the observational nature of this study, the lesson structure and the tasks set by the teacher did not alter if students chose not to participate and those not in the study were not disadvantaged in any way.

Anonymity

The aim of this research is to share the story of the events that occurred in my classroom. The school within this study is a non-denominational, non-selective, independent all girls’ school, positioned in the inner suburbs of Melbourne. It was difficult to ensure complete anonymity of ten participating students, this was due to the size of the sample and because I can be identified as the teacher/research. The students were informed in the Plain Language Statements of the possibility of them being identified.
3.6 The Research Design and Data Collection Methods

The research design included collecting a range of interpretive materials, which could be used to interpret the data. The interpretive process became an exercise in seeking patterns of evidence (Denzin and Lincoln, 2009). The word *interpretive* is used to define this type of study rather than *descriptive*, because interpretive acknowledges subjectivity (O’Toole, 2006, p. 94). A range of data collection methods were used during the process:

**Questionnaire**

I considered it important that all participants completed a questionnaire prior to the commencement of the study. (Appendix 4). Questionnaires provide case study researchers with a data-gathering technique that collects information from an individual unit regarding the person’s knowledge, beliefs, opinions, or attitudes about or toward a phenomenon under investigation (Miles and Huberman, 1994). The most critical part of developing a questionnaire is defining what you want from it and how you will use the information from individuals (O’Toole, 2006; Yin, 2011). In this instance the questions provided a baseline understanding on: the mobile devices the students owned, how they viewed their use of mobile technology, how they ranked its use from a social to a learning tool, as well as clarifying terms, and providing an overview as to the ways in which they were currently using devices in their everyday lives and in school.

**Interview**

The interview is the most common method of collecting data in qualitative research (Cassell and Symon, 2004; Chasteauneuf, 2010). The goal of the interview is to see the research topic from the perspective of the interviewee and to come to an understanding of how and why they have come to this perspective. Interview questions can take three forms: structured; semi structured; unstructured. Structured interviews are characterised as creating an more formal environment and involve the interviewer asking each respondent the same series of questions (Bernard, 1988). Semi-structured interviews allow for the interviewer to use prepared questions as a guide, but the conversation may stray from the question when s/he feels this is appropriate, which can allow informants the freedom to express their views in their own terms (Bernard,
1988). In this study interviews were conducted at two points in the research process. The first set of interview questions was structured with all participants being asked the same questions. This format was chosen because it could produce consistent data that could be compared across a number of respondents (Appendix 5). These interviews were audio recorded so that they could be used verbatim as a primary source of data (Patton, 2005). The recordings were transcribed and the responses were compared and coded question by question (Miles and Huberman, 1994). This process acknowledged some similarities and differences across the whole data set. When these were cross-referenced with observations they exposed some significant emergent themes and identified some key informants.

**Observation**

Participant observation is a useful qualitative research method. The objective is to help researchers learn the perspectives held by the participants in the study (Patton, 2005). Yin (2011) states that observing, “can be an invaluable way of collecting data because [of] what you see with your own eyes and perceive with your own senses.” (p. 153). This makes observation a form of primary data because it is not altered by what others might have reported to you (Yin, 2011). As a qualitative researcher, the presumption is that there will be multiple perspectives within any given community, which in this case is my classroom environment. I was interested to know what those diverse perspectives were and to understand the interplay among them. This method is distinctive because the researcher approaches participants in their own environment rather than having the participants come to the researcher (Patton, 2005). I found that placing my observations against other forms of data, such as interviews and questionnaires, highlighted some similarities and differences in students’ behaviours and interactions.

**Fieldnotes**

The qualitative researcher generates fieldnotes to remember and record the behaviours, activities, events and other features of the setting being observed (Mack et al., 2005). I kept a journal of fieldnotes during the two-month observation period of the study. Perspectives were chronicled and notes made on the process of learning and the interactions the participants made with mobile devices. These notes took the form of jottings or scratch notes (Burgess, 1991), which were based upon observations of
events that occurred within the lessons. Keeping a notebook to hand enabled observations and comments to be noted as they were occurring in the classroom. Noting a few words or short sentences down during the lesson provided a prompt that assisted in recalling observations, conversations or occurrences at a later date, this data is also used in the discussion section.

**Focus groups**

A focus group collects the voices of a larger number of informants (O’Toole, 2006). Within this method of data collection the participants bounce ideas off one another based on conversation starters and provide rich and informed insight into the subject matter (O’Toole, 2006, p. 114). The use of the focus group enabled some of the transcripts from informants of the study to be placed together. The semi-structured nature of the focus group discussion provides the opportunity for the researcher to seek clarification, extend or elaborate on a response (O’Toole, 2006, p. 115). The focus group discussion took place close to the end of the process. This data collection method enabled a less structured discussion on some of the emerging themes to occur and this allowed for more open discussion around these.

**Samples of student work**

Samples of student work can be collected over time with the intention of showing growth (Miles and Huberman, 1994). Students’ work is collected in order to evaluate performance, but also as data to analyse in order to examine the teaching and learning that produced it. (Maclean and Mohr, 1999 p. ix). Students within this study used a journal as a place where they could compile concept maps, brainstorm ideas, record research, annotate scripts, sketch and annotate designs as well as for more formal structured written tasks. The form of the journal and way it is presented was personal to every student. The student journal was used by the teacher-researcher as a source of data. I analysed and compared the ways in which the students in this study interacted with their journal, the choices they made as to how and when they used this document compared to their mobile device and this provided a source of valuable evidence.
3.7 Data Analysis

Qualitative data analysis is the interpretation of material to make meaning about what is represented in it. Yin (2003; 2014) considers case study data analysis to be the chosen method of analysis when you are able to describe the phenomenon, which may focus on a case (either group or individual) and its features or links between them. The analysis can also focus on comparing cases and what they have in common or differences. The second aim is to identify the conditional, which means that the researcher looks for explanation of differences in the cases, and the third aim is to develop a theory (Yin, 2003; 2014).

Data analysis is a continuous process throughout the study and this allows the researcher to shift attention in ways that foster a more developed investigation of emerging themes (O’Toole, 2006). Additionally it enables the researcher to consider questions that could be posed during second or third rounds of interview or focus groups as well as providing a focus for further lesson observations, which will facilitate the researcher in gaining a deeper understanding of the occurrences.

Method of Data Analysis

Once the data has been collected the next stage is to make sense of it and then make meaning out of it (O’Toole, 2006, p. 35). During the initial stage of the research project I had several sets of results from the questionnaire, the first structured interview, participant observations and fieldnotes. These not only provided information on how students were using their mobile devices, but also when and why they were making choices to use (or not use) this tool within the learning environment. The structured interview questions were transcribed question-by-question placing each response next to one another to form a table. The recorded interviews reflected the voices of the participants within this study and were transcribed verbatim so as to allow them to be used as primary data. Key words and ideas were coded from them, which revealed common occurrences (Miles and Huberman, 1994). This process assisted the researcher in spotting patterns, common words, themes and ideas. This data was coded and combined with participant observations. The placing of this data together assisted the synthesis of knowledge into patterns and emergent themes and later in identifying some main informants.
3.8 Summary of Methodology

The research design facilitated a range of data to be collected from the student case studies that I was able to analyse during the process of the investigation. Once analysed this data generated knowledge about student’s interactions with apps and the relationship between the students, the device and the learning experience. The following chapter uses this data to inform discussion and analysis of the apps themselves and the ways in which they assisted learning experiences.
Chapter 4 Discussion

4.1 Discussion

This chapter focuses on the discussion of my fieldwork and introduces the findings that emerged from it. It takes the form of three sections. The first section will cover the contextual information relating to the VCE Theatre Studies curriculum and to my curriculum design and sets the scene for the research project. The other two sections use this design as the structure for discussion. The second section works chronologically and offers snapshots from inside the Theatre Studies classroom during part one of the task. The third section takes the reader further into my classroom during part two of the task and is structured according to the conceptual framework of the three approaches introduced in my literature review. It is here I explore emergent themes in more explicit detail and discuss my key findings.

4.2 Setting the Scene

In this section I outline the curriculum and how my curriculum design was undertaken in my drama classroom, as well as how this design enabled my students to go about achieving their assessment outcomes. This section sets the scene for the research project.

The Curriculum

The research project took place in a composite VCE Theatre Studies class, which was made up of students who were studying Unit 1 or Unit 3 of this VCE study design. The observation for this study took place when the students in year eleven were undertaking their first assessment task for Outcome 1 and 2 of Unit 1, in which the students are required to:

- Be able to identify and describe the distinguishing features of various play scripts and
- Apply acting and other stagecraft to interpret the play script

(VCAA, Theatre Studies, Study Design, 2014-2018, p.11-12)

At the same time, in the same class, the year twelve students were undertaking the first term of their production process assessment task for Unit 3 and focused on Outcome 1:

- In this unit students develop an interpretation of a playscript through the stages of the theatrical production process: planning, development and presentation.
Students specialise in two areas of stagecraft, working collaboratively in order to realise the production of a playscript. (VCAA, Theatre Studies, Study Design, 2014-2018, p. 13)

The implicit expectations of these assessments require the students to develop an understanding of the distinguishing features of a theatre style, and apply this understanding through a theatrical production process as categorised above. Additionally, they must apply their knowledge through the use of stagecraft.

Stagecraft is defined in the VCE Theatre Studies study design as: acting; directing; design: set, costume, sound, lighting, make-up; properties; theatre technologies; publicity and stage management. Students have the choice as to which stagecraft/s they can use to respond to a task.

My Curriculum Design

In my curriculum design, during the course of the investigation the Unit 1 students study the theatrical style of Greek Theatre, through the exploration of the play script The Trojan Women by Euripides. The Unit 3 students explored the Jacobean theatre style and the play script Macbeth by William Shakespeare. My curriculum design for both of the Unit 1 and 3 was the same and structured in two parts. The first part of the task took place over a two-week block and included a series of teacher led creative activities and workshops where the students were introduced to the style and the playscripts. The learning outcomes focussed on facilitating the learner to develop a relationship with the learning context. It was during this part of the process that the students creatively explored and developed ideas, skills and knowledge for their theatrical interpretation in part two. The learning outcome of the second part of the task was to plan, develop and present an interpretation of the playscript studied in part one of the task. The students formed small companies, individually identified stagecraft areas and worked collaboratively during a theatrical production process.

The curriculum design required both the Unit 1 and 3 students to undertake a range of tasks designed to research, plan, experiment, play, create, develop knowledge, develop ideas, engage, reflect, present and evaluate as individuals and within groups. During this process students demonstrated their knowledge and provided evidence to the teacher to satisfy the outcomes of the assessment tasks (as categorised above) from both a practical and theoretical perspective. This evidence included: practical work, presentation of visual designs, conversations and teacher observations, recording of
thoughts and reflecting upon their tasks. Providing opportunities in the drama classroom for students to develop the skills they needed to write and respond to tasks is an essential part of this process and this curriculum design included time where students were encouraged to document and reflect on their learning experiences. In this classroom the students could employ the use of a journal, which provides them with a place to generate and create ideas, explore thoughts, document, reflect, evaluate and express themselves. The journal is one of the ways the teacher can draw evidence of student understanding. The format of the journal depends upon the personal preferences and individual needs of the individual students. Students in this class used a range of paper based (for example a visual diary or folder), blogs, e-journal or a combination of these.

**The Research Investigation**

I used the two parts of my curriculum design as the structure for my research investigation. The design within part one of the task centred on opportunities for multimodal literacies (Carroll, 2002) to occur including allowing moments for reflection (whole, group, small group and individual), questioning, discussion and noting down of ideas and thoughts. During this part of the task as the teacher I was leading the workshop activities, while as the researcher I was observing the participants in lessons and also conducted the first round of structured interview questions. It was during this phase that I began my data analysis. The data gathered during this phase and some general dialogue around classroom occurrences form the basis of this discussion. During the second part of the task, as the teacher I was assisting groups with their theatrical process. As a researcher I was able to use the analysed data gathered from the first phase to focus on the main informants and emerging themes. Data collected in the second part of the task included further observations, a second round of semi-structured interviews and a small focus group discussion, which provided additional information for further analysis. The discussion that arises from the second part of the task occurs in the last section of the discussion chapter.
4.3 Inside the Classroom: Part one

In order to communicate how students were initially building a relationship with the tasks and making choices about their use of mobile devices, I have chosen to take the reader into the classroom and to both describe and discuss the lessons. The chronological format used in this section will maintain the naturalistic feel of the research as it was unfolding and will facilitate explanation and discussion of observations that occurred during this two-week block of time.

Week One

The structure of the curriculum in Week 1 was designed to engage the students in creative play and for them to begin to understand the characters, style and themes of the playscripts. Although my students were able to use their mobile devices in drama lessons they did not always bring their devices to class. Once the first task had been set, several students who had their devices on them took them out of their pockets and began to use them in various ways, some of which included: taking pictures, recording themselves as they improvised some of the scenarios, capturing images of themselves working and of white board notes and using their devices to access pdf files of the play script they were using in the assessment task. I observed one participant opting to use a pdf version of the script on her smartphone rather than the paper script. As a result the student (as actor) was observed to physically engage and interact with her partner more freely in the role-play activities and was able to use and respond to facial expression, which gave her role-play the appearance of being more engaged and rehearsed. The portable and lightweight affordance the handheld device offered was observed to be less imposing and cumbersome than the script, which seemed to allow her more flexibility when experimenting with character (Melhuish and Falloon, 2011).

The first lesson of the curriculum design also included time for students to record ideas and explorations. Catherine, who had never considered using a mobile tool in a lesson, had the idea to create a WhatsApp group for the whole of the class so that they could send and share information via this social networking tool. WhatsApp was already on her mobile device, enabling her to instantly access it, create a WhatsApp group and send an invite to every member of the theatre class, posting media images
and recordings of the lesson so that everyone could access them for their own desired use.

By the end of the first week of the study, there was a significant increase in the number of students who regularly brought their devices into lessons. Participants were observed to be making a choice to engage with their mobile devices within their creative process. These interactions included:

- Forming a WhatsApp group to collaborate and share ideas outside of the classroom and continue their learning beyond the boundaries of the formal learning environment.
- Using and generating Pinterest boards to support and share stagecraft images.
- Researching using search engines.
- Finding, opening and using music tracks (whether on iTunes, Spotify, or YouTube), to creatively explore ideas and themes within performance work.
- Capturing images of: notes on the teacher’s white board, their own brainstorming mind maps and their own work at various stages in the practical process.
- Opening and accessing the playscript as a pdf.

I noticed in the first week that the student’s uses of apps were aligned to some of the multimedia modalities listed by Carroll (2002). They were using apps to stimulate ideas through the use of music, using the camera to record and researching using Internet search engines, noting, sharing and developing ideas that extended their knowledge. It was also during this first week of the study that a contradiction occurred between the perceptions and prior expectations some participants had about their use of apps and mobile devices. I observed one of the participants in the second lesson using her smartphone and apps to find and play music, document her process by capturing images as well as voice record some reflections, but when questioned she reported that she did not use apps to learn or in lessons. For this participant, the act of interacting with her device during the drama lessons was a common occurrence, however she had not considered the action of opening and using an app one that assisted her in responding to a learning outcome, or that her device could be a learning tool. This response prompted me to delve further and question the tacit relationship students have with their device. Similar to Buckingham’s claim (2007) in this case the
participant seemed to have the skills to use the technology but did not recognise how they were using it, nor directly link this use or interaction to learning.

Another common trend noticed in the early stage of the study was that some participants thought they needed to be using or finding subject-specific apps for learning to occur. However, what was observed was that the apps they had identified in the questionnaire as using in their everyday lives (e.g. WhatsApp, notes and recording apps, photo apps and iTunes) were the ones which they immediately utilised and interacted with during their creative process.

**Week Two**

At this point in the process my curriculum design included the introduction of various stagecraft and design roles, giving the students opportunities to respond to the playscript as designers, directors and actors. This prompted some of the participants to begin to source and utilise stagecraft specific apps. During this week I observed the students using apps in the following ways:

- Sourcing Drama specific apps including: line learner by Kelly and wardrobe by Rachel. Another participant found a series of apps (writing prompts, character prompt, dramatic fx) that offer improvisation ideas and starters and encouraged actors to further develop characterisation though a range of improvised scenarios, and assisted them with developing character status and motivation. Sound effect apps (SFX, soundfx) were also found and utilised.
- Photographic images and recordings were being used by the students to: Record the blocking of moments which were viewed to help remind, develop, refine their work and reflect on their process for the purpose of assessment. Additionally, these offered a visual for absent members of the group/class.
- The design students continued using Pinterest, creating virtual boards to store and pin images of costume, make-up, set and props ideas.
- I observed a further increase in participants making the choice to open and app and access the playscript as a pdf.

These observations and the initial round of the interviews communicated that the participants were able to show and articulate ways in which they could be, and were already, using apps in their lessons. They were able to make connections regarding
how some ‘common interactions’ supported their learning; they were observed to be using apps with an understanding that the interactions were part of their creative process and were beginning to discuss how these interactions were enhancing their learning. Evidence of sharing knowledge was observed through the sending of notes, images and recordings from the lessons. The participants were observed interacting with various apps while actively creating and exploring, up on their feet within their formal lesson environment. The practical work did not seem to stop. The creative flow experienced by the students within the lesson was not interrupted, and their devices seemed to not distract them away from creating, on the contrary the devices and their interactions with them were seen to be assisting with the creative flow (Csikszentmihalyi, 1997). At the end of Week Two the curriculum design introduced the second part of the task to the students, which is where the students were working more independently.

4.4 Inside the Classroom: Part Two

The data analysis from part one of the task generated some emerging themes and common ideas. Using this knowledge, I was able to focus attention on the participants who later became my main informants and further observe how these students were interacting with apps. The next part of the discussion has been organised into three sections as foregrounded in my literature review. In the tool led discussion I examine my observations from the formal learning environment that relate to the use of mobile technology, mobile learning affordances, tools for reflective practice and creative flow. The pedagogy section looks in detail at collaboration and the social constructivist theory of Internalization and ZPD. The final discussion section focuses on Sociomaterialism and observations surrounding ANT, agency status, democratic learning spaces and how ZPD was extended when the collaborative interactions were placed in a virtual space.

Interactions Focussing on the Tool

The participants began to make choices as to when they would use an app on their mobile device over another source of technology with some of these choices being led by the affordances of m-learning Melhuish and Falloon, (2011), ANT’s translation
(Callon, 1986) and occurrences (Goodyear and Carvalho, 2013). Catherine, the student who, prior to undertaking this study had never considered using mobile devices as a learning tool, was observed consistently interacting with her device, preferring to use this tool to any other. Kelly, who was previously resistant to the use of mobile technology was also observed to use her device to research an idea. When asked specifically why they were using devices during lessons they replied:

*Because it’s in my pocket, it’s a handy tool.*
(Catherine, Fieldnote Observation Week Three)

*Being able to research on the phone, being able to get it out, it’s just so much more handy ... and I get an instant response.*
(Kelly, Second Round Interviews).

In these examples the networks forged between the human and the app generate occurrences to benefit the human (Fenwick, 2010, 2015; Goodyear and Carvalho, 2013). For both Catherine and Kelly, having the device to hand (portable), meant they could use it to research and access information. The relationship both of these participants had with the tool, having it to hand and being able to instantly access a range of apps benefitted their learning experience. Rachel, the EAL student and Kelly, were also observed to make choices to use their device because it was to hand, in these cases engaging an app to reflect on their process.

*I’ve got it in my pocket so I’m going to write it now in notes while I remember it.*
(Rachel, Fieldnotes Week Three).

*Because it’s in my pocket and I can’t be bothered to go and get my pen or open my laptop ... when I didn’t have my book and you were talking to us about important things, I recorded that.*
(Kelly, Second Round Interview)

The mobile technology appeared to offer other affordances as listed by Melhuish and Falloon, (2011), in this case these situated, just-in-time learning opportunities, enabled these students to continue on with their creative process quickly and efficiently (p. 4). Once participants realised they could achieve specific occurrences on their devices, they were observed choosing to use multiple apps to generate other networks, forge multiple occurrences and achieve other learning experiences for example; opening *iTunes* to play music, opening a recording app to record ideas and finally opening a camera to take images (Goodyear and Carvalho, 2013).
During the planning and development phases of the second part of the task, some participants who were costume and set designers chose their visual diary/journal to sketch or mock up the development of their ideas, which seemed to be a more logical tool for their creative exploration at this time. However, participants in other stagecraft areas were observed using their devices in preference to other tools; using the google app for research, rather than opening their laptop; using a notes app rather than handwriting a note in their journal; recording their reflection or thoughts on a voice recording app rather than writing it up on their laptops or in their journal. I was led to inquire as to why they had made these choices at these points. Catherine commented:

*I am using the phone for basic research ... [in lessons] rather than getting my laptop out ... when you search on the computer you have thousands of options, but this way it’s simplified. I could just go straight in and find what I wanted.*

(Catherine, Second Round Interviews)

The combination of Vinu et al. (2011) affordances of m-learning, Callon’s (1986) ANT definition of translation and Bird’s agency (2009) can be used to consider how these students were being led into making choices to dismiss using their laptop in the lesson or forgoing writing in their journal, and to utilise the capabilities these devices could offer them at that time. Catherine identified that by using a search engine app the information she required was right to hand. The agency the app exerted not only provided her with instant access to this information, but this interaction also reveals that Catherine made a *choice* to use her mobile device over another piece of technology (Bird, 2009). This network translation was made because Catherine problematized that the device would offer her the information she needed, she locked the app into the role of the ‘resolver’ because she recognised it would act in a particular way and could offer her what she required, in this example the app and the tool acted in a way to keep the creativity going (Callon, 1986).

Students were also choosing to use mobile devices as a means to record information that assist them in developing their creative process. Catherine was again observed recording her thoughts and ideas in action, whilst keeping the creativity on its feet.

*When I didn’t have my book [journal] and we were discussing things I wanted to remember... I recorded them.*

(Catherine, Second Round Interview)
I observed Kelly, who was resistant to the use of mobile technology using her device to also record verbal reflections, recording her actions and interactions whilst actively involved in the creative process (Taylor et al., 2000).

*I use* voice memos to record lesson information and conversation we have in class … This allows me to concentrate on what we are saying and have an in-depth conversation rather than concentrating on taking the notes … I can just listen and respond.

(Kelly, Focus Group Discussion)

The device with its portable and situated affordance, enabled Kelly to interact and actively contribute to the class discussion (Melhuis and Fallon, 2011). Other participants used various recording apps ranging from voice memos automatically installed on mobile devices, to apps they found and downloaded such as *iSaidWhat, Evernote* and *Dragon Dictation* to record small and whole group conversations. It became clear as I observed these interactions that Dewey’s (1933) theories on reflection were at play. The process of reviewing and reflecting their recordings in their own time, hearing their thoughts and ideas which they had recorded whilst they were in the moment in a lesson, which Taylor et al. (2000) refer to as ‘reflection in action’, offered opportunities for deeper learning and higher critical thinking with Catherine reflecting that:

Because, you could stop [the recording] … you can think … write notes … and add more detail or description. [I found] I wasn’t just writing up what was said but what I thought about something as well.

(Catherine, Focus Group Discussion)

Participants were also observed to share this knowledge through other apps, such as *Dropbox* or *WhatsApp*. Catherine used *WhatsApp* to instantly share a recording and images with absent members of her group; she sent them straight from her device, before she left the classroom. This information, although specifically sent to benefit the absent members, could be accessed by all of Catherine’s group members, who were able to open and review this message in their own time and space, away from the formal classroom environment. The capability to use an app to instantly post something into a virtual space for the whole group to access, transcends the social and learning interactions beyond the physical space and into the virtual world, demonstrating how these spaces as Sharples et al. (2010) states have become powerful gateways to learning.
Individual participants were capturing recordings, images and storing data on their own devices by using apps such as: *notes*, *iSaidWhat*, *instagram*, *camera*. They were also able to individually use this data and share activities and experiences with other group members through the use of apps such as: *facebook*, *Dropbox*, *Instagram* and *WhatsApp*. Similar to the work of Banister, (2010); Dale (2008); and Jensen (2008) the students were able to use this technology and multimodal literacies to stimulate, capture, review and share their work. These interactions communicate significant learning benefits surrounding how the participants are using technology to develop their learning experience, and how they respond to their work through the use of technology (Anderson, 2014). Participants were able to use apps to review their work, as well as to share and send information to other members of their group, and to those who were absent. The ability to review a presentation enables the actors to also assume the role of a director (a VCE stagecraft consideration) and consider the perspective of an audience, which provides individuals and groups with opportunities to reflect, develop and modify their creative work. Although students were able to verbally negotiate, explain, discuss and reflect on their work with one another, the ability to replay the performance and use apps to physically show and share ideas benefitted them in the development of their creative process.

Once the students had begun to realise that there were significant benefits to using apps, they began to target apps that might enhance their individualised specialised stagecraft area.

*There is something that I saw which will create a document of the costumes so that you can keep track of the sizes and what they are wearing ... I can keep track of the girls and their sizes so I don’t have to always measure ... It’s called wardrobe, yes, it’s like a wardrobe.*

(Rachel, First Round Interview)

The potential for this specialist wardrobe app was further played out within a lesson. During the planning stage Rachel, the EAL student was observed using *wardrobe*, this app enables the user to create virtual ‘wardrobes’ by inputting images and details of costumes, in this case for characters in the *Unit 1* playscript of *Trojan Women*. The app allows mini folders to be created where information could be stored and this is where Rachel placed the measurements of her group members. The affordance of *wardrobe* initially appeared to be individualised and personalised to Rachel and her
group, however, the long-term potential of this app extends beyond the present, and into the future due to its capabilities of being able to both store and share these wardrobe files (Traxler, 2009). During the planning stage of the task participants used Pinterest to gather inspiration, create and generate visual boards on various stagecraft areas. While searching for inspiration, one participant learning about the stagecraft of make-up found a step-by-step video on how to create an aging effect that they ‘pinned’ to a mood board within the app. In the development stage of the process, when students were reflecting on and developing their stagecraft ideas this participant chose to go back and use Pinterest. The functionality of Pinterest allowed her to find the video on aging she had previously stored on a board quickly and easily, and extended her ZPD by enabling her to learn a the new skill of using make up to age and actor, which for this individual contributed towards a learning outcome. Pinterest boards offered multiple learning opportunities for the students. They were able to print and place their boards in their visual journals, annotate features and ideas to explain and reflect their thought process on stagecraft choices. They could also plug their devices into a projector and display the boards during a production meeting, post the boards to their WhatsApp group or share them with their peers and/or teacher by sending a link.

It was during part two of the task that participants identified some further benefits of the features of WhatsApp. The design of this app enables individuals to invite and form exclusive groups. Each group member receives a notification every time a member of their group contributes to their discussion. Responses within the app are broken into threads of dialogue and organised in linear fashion with the name of the group member who has added a comment appearing above their contribution. As each member of the group adds a comment, the conversation continues and builds in chronological order with all the participants being able to see who is adding to the discussion, and the order that these comments are made. The WhatsApp conversations remain accessible until the member of the group who creates it, deletes it. These capabilities proved to be of benefit to the participants in many ways. Having a record of the conversation meant that the participants had a documented reminder of virtual conversations. During the development stage of the task, I observed a participant accessing a conversation thread from her smartphone. The group then used an idea that had been discussed during the previous evening’s WhatsApp conversation to
stimulate their dramatic work. The instant affordance of having the app to hand benefiting the students learning as they were able to open the app, quickly find the stored idea and use it in the development of their groups creative task without sitting down and breaking their creative flow (Csikszentmihalyi, 1997; Melhuish and Falloon, 2011).

Screenshots of the *WhatsApp* conversations also proved to be an effective way in which to reflect upon thought processes. Imogene, who already utilised apps in her learning found interaction provided her with evidence for assessment.

> *It’s important to show my evidence and if you’re already doing the reflective work on the app, why would you do it again? That’s brilliant brainstorming and reflections!*
> (Imogene, Focus Group Discussion).

Once these discoveries had been shared amongst the class, other students were eager to include screen shots of their conversations within journal work and share them with the teacher. It is here that I began to observe a convergence of mobile learning and Vygotsky’s theories of internalisation and social interaction (Vygotsky, 1964; 1980). The students were taking a screen shot of a conversation from *WhatsApp*. These documented threads of conversation could be used within their journal as evidence of internalised knowledge and to demonstrate how they were individually addressing outcomes within their creative process. Students were also further annotating these images with comments, communicating what they have learned and how they have built knowledge with and from other people’s comments. Similar to findings in Raphael’s study (2009) this process resulted in participants generating deeper, descriptive reflections that were more detailed and fully explained. These annotations provided further opportunities to communicate reflection and evaluation on their creative ideas.

> Me: Has it given you an ability to reflect in a way that you might not have had in the lesson?
> 
> *Participant: Yes, I’ve made progress in my reflection, I can work out how my choices are going to impact on others, once I get to the end of the lesson I can review all of the changes.*
> (Participant, Second Round Interview).
WhatsApp became one of the main ways groups communicated with one another. Its capabilities proved to be of significant benefit to the learning and collaborative nature of the theatrical production process. Behaviours of the participants and the ways they interacted with apps during the study significantly increased as they found diverse ways of using a range of apps within their creative process. The act of using an app became an explicit part of their learning process and this is where the findings from the tool led approach begin to merge into the findings within the pedagogy led approach.

Interactions Focussing on Pedagogy

In the previous section I discussed how and why students chose to interact with the device within the creative tasks of this study and how m-learning and the affordance of the mobile technology appeared to be enabling these interactions to occur. There is also significant evident surrounding how these interactions look to be contributing towards the student understanding and knowledge. Within the following section I focus on observations of student learning that were shaped by these interactions and I consider to what extend they impacted upon the participant’s development of knowledge.

The social constructivist drama teacher establishes and teaches a culture of collaboration and cooperation (Macy, 2013; Wagner, 1998). The literature review foregrounds the importance of collaboration within drama with a common understanding made by my drama students that to successfully complete group presentations, individuals needed to work collaboratively (Anderson, 2013). This culture of cooperation was already established by the drama teacher and by the students both in the classroom and the virtual space. The classroom was where they worked together face to face, experimenting with stagecraft, discussing and sharing ideas in production meetings, rehearsing as an ensemble, in other words the tasks that needed physical interaction. Similar to the physical world, the virtual world required established protocols of behaviour. There was a common agreement made by the students that they would all participate in this form of interaction.

*Let’s form an individual WhatsApp group so that we can post our ideas tonight before tomorrow’s lesson. Is everyone ok putting at least one thing up and making at least one comment? It will save us heaps of time.*

(Catherine, Fieldnotes, Week Three)
The questionnaire revealed that prior to the study all of the participants were familiar with how WhatsApp operated and were using it within their personal lives so the parameters about how this social networking app worked were already in place. The participants seemed mature in their interaction within both the formal classroom and informal virtual spaces and were observed to frequently reiterate that they would not tolerate inappropriate, out of context or off task discussions.

*Don’t fill them with chitchat, everyone has to agree to put in, we have to make sure that all of the ideas are shared.*

(Participant, Fieldnotes Week One)

The interactions that occurred within both of these spaces appeared to have a significant impact upon both individual and group learning. Social constructivist learning involves internalising individual pieces of knowledge and then moving beyond those current levels of competence. Vygotsky (1980) believes that “scaffolding should function to move learners to the next level.” (p. 86). In the planning stage of the task, students individually explored, developed and internalised knowledge on their chosen stagecraft. Rachel was observed to go through a learning process that can be aligned to Koole’s (2009) framework for mobile learning. As the costume designer, Rachel used several apps including Pinterest, a costume history and costume design app to research and generate design images for costumes. Individual participants were responsible for sharing their stagecraft knowledge with the group during a physical production meeting. Rachel was the expert in her group on Costume and it was her job to make sure that she clearly articulated her design ideas to her group. During this meeting Rachel decided to use her mobile device to present her Pinterest board of visual images. Firstly Rachel employed the use of an app (device aspect) to research (learning aspect) and teach herself how to make an item of costume. Then through collaboration in a production meeting (social aspect) she shared this knowledge with her group. The apps assisted her with developing a level of competence in a specific area. As Rachel interacted with the apps she mastered a skill and extended her ZPD. An individual’s competence, in this case Rachel’s ideas and Costume making skills, were shared with the group through the production meeting. The collaborative interaction of the production meeting resulted in shared knowledge. The extent to which other group member’s competence in design and costume making was extended during this process was dependent on a set of variables.
These variables could be whether the rest of the students were physically present, actively listening, focused on the interactions and contributing.

When these interactions were placed within a virtual shared learning environment (Traxler, 2009), in this case WhatsApp, multiple occurrences were observed. WhatsApp has the capability to create a democratic learning space (Dewey, 1934) because it imparts information and knowledge to be distributed in many formats (audio, visual, written), servicing individual learning needs (Amry, 2014). I observed Rachel, who was less certain with her language ability and did not always feel as confident to verbalize her ideas in the face to face production meetings, contribute more freely in this space.

*I am not always confident with my voice, the words, getting them right is a struggle. I like to use pictures … Colours, visuals … my ideas get heard, I also like, and can see what everyone else is thinking, it’s an easier conversation for me to follow as sometimes I miss things. No one can speak over one another, so everyone is heard.*

(Rachel, Focus Group Discussion)

Further to Amry’s (2014) discoveries, the closed-in nature of the WhatsApp group encouraged focused collaborative and collective responses whereby all students felt secure and included. This space provided individuals with a place where they contributed their thoughts and ideas equally to the discussion, without interruption.

*I don’t always speak much in lessons, in fact I only really speak if I have to …. I find that [in WhatsApp] I can add to someone else’s thought or make my own.*

(Kelly, Focus Group Discussion)

The ability for this app to integrate across media platforms enabled individuals to place or post their responses in a format they considered to be appropriate to them. Each member of the group brought internalised knowledge to the space and as a result shared it. Every individual post was visible and present in the space for all members of that group to see. These posts or interactions could be counter responded to by a comment, image or recording. The individual was able to share independent, internalised knowledge on skills they had mastered in their own stagecraft areas, for example how they might make a costume (costume stagecraft) or interpret a moment from the script (acting stagecraft) in the collaborative space. Once ideas and skills
were shared students responded to these ideas and were able to receive comments from other members of the group.

It is in this, shared learning environment (Traxler, 2009) or affinity space (Gee, 2005) or as I have named it ‘social networking bubble’, discussion and interactions on skills, ideas and stagecraft, continued to be shared amongst the group resulting in individual and group ZPD being further extended. ZPD doesn’t contain finite boundaries of learning or development, instead it should be viewed as a “dynamic and fluid social space within which individuals move about as the content, learning contexts and learner characteristics change.” (Dimitriadis & Kamberelis, 2006, p. 196). The ability to have indepth reflective conversations back and forth within the app, with multiple responses all of which build knowledge, enabled further development of ZPD for all parties. The questions posed by individuals within this virtual group, combined with the functionality of WhatsApp, enabled the individual to not only vividly describe their knowledge, but to visually and/or aurally engage the group with images and sounds.

*Imogene: [our ideas must] develop because we can come to a conclusion about what we want to do or what we have decided, like the colour of a costume or a set, so it must develop.*

(Focus Group Discussion)

The critical analysis and evaluation of the colour of the costume, how to make a prop and specific features on the design of the set were being presented in this space. Individual competence in these areas was further informed by other individual responses, building the knowledge or competence. It appeared that by focusing the interactions into this virtual bubble, the learning that occurred within these surroundings were maximised. It is to be acknowledged that significant research already exists surrounding affinity spaces (Gee, 2005). I have used the term ‘social networking bubble’ to describe how the networks and webs of information move within this virtual space. The metaphor of a bubble with its elasticity, buoyancy, and ability to become different shapes and sizes seems to fit my analogy of what is occurring within this space. Within this democratic learning bubble the interactions of group members and the networks of information converged, with each new piece of knowledge further contributing to the discussion. The members of the group were influencing the individual and collective ideas and as a result of these networks and
ideas continuously bouncing off one another, they were building and extending. These interactions persisted until individual group members concluded their part in the discussion and opted out of the space. The boundaries this environment provided and the way in which these fostered democratic relationships resulted in new knowledge being developed by members, and the individuals within this shared environments ZPD being extended (Vygotsky, 1964). As Laurillard (2013) states, mobile technologies and human interaction reconfigure space and within this study interaction occur within an app, which is a virtual space. These interactions cause the virtual space to be constantly reconfigured (Laurillard, 2013).

**Interactions Focussing on Sociomateriality**

It is within this final section of discussion that the previous two sections begin to converge. Within the previous sections discussion has occurred regarding the choice to use an app to engage with the task and a deeper conversation surrounding how students were utilising the capabilities of specific apps to enhance and develop their learning. Sociomateriality (Bird, 2009; Law, 2007) provides insight into networks and interactions between the device and learner, how these interactions happen and also around agency and who is in control of them. In this section I develop a deeper understanding of how the virtual space of *WhatsApp* influenced these networks. It is also in this section that I discuss the concept of agency and how apps affect behaviour.

The interaction that the shared networking bubble of *WhatsApp* provided, enabled the learning to transcend the formal surroundings by moving it away from classroom into a virtual or informal learning environment. The understanding that these virtual spaces were places that interactions and collaboration could continue was vital to the Theatre Studies students’ theatrical process. It is within this environment that the networks and interactions promoted by this virtual space enhanced the students learning (Law, 2009). The focus of the assessment outcome for these students required them to work collaboratively towards an end result. In understanding that the collaborative process is principal to drama, the students in this study needed to work within a specific timeframe as performance assessments were predetermined events in the school calendar, rendering them immovable (Anderson, 2013). A value is placed on the time they had with one another in class, leading to a recognition that decisions could be
made about what could be accomplished in class time or completed using WhatsApp. *WhatsApp* encouraged and created collaborative opportunities for production meetings and for discussion to take place in the virtual world.

*WhatsApp* adds to the face-to-face conversation. Both are necessary... but we can accomplish other things outside of the classroom and then when we are in production meetings and lessons we can use them for more practical uses. (Kelly, Focus Group Discussion)

Within this space students were able to generate and respond to information in their own time resulting in them using time more efficiently. This proved to be of significant benefit to the students in the study by extending their time beyond the formal classroom environment and meant that these virtual interactions served a purpose and became an important way to cooperate. Similar to Laurillard (2013) thoughts, in this example time and place were reconfigured and because the app was accessible on a portable device, the interaction could (and did) occur at any time and place, for example whilst travelling from one location to another.

*It’s the way we brainstorm, we can be on the tram and communicating [on social networking] about the ideas we are having or responding to something. It’s what we do everyday.* (Imogene, Second Round Interview)

The app becomes the obligatory point of passage or mediator between the device and the user (Vygotsky, 1964; Fenwick and Edwards, 2010; Law and Collins, 1992). The placement of the material object of *WhatsApp* into the learning process resulted in the participants being able to come back into the formal lessons with a focus on tasks that needed to be undertaken face-to-face, resulting in increased productivity (Sorenson, 2009).

During the second part of the task further observations were made regarding agency with students making judgements to employ specific apps for desired responses. Apps on smartphones can operate differently to their desk or laptop counterparts. Once students in this study appreciated what could be gained by utilising an app on their mobile device rather than on any other technological device available to them, it led them to choose to interact with the app on the mobile device. For example, Catherine knew the functionality of the *Google* app operates differently from the desk or laptop application. She chose to employ her device to search for information, rather than using her laptop because she knew it would act in a certain way:
... having the apps there; the information right there, keeps the flow of the
lesson. It simplifies the choices. They might not end up being the final choices,
but you get answers...
(Catherine, Second Round Interview)

We can attribute this interaction to Bird’s (2009) agency, the choice to engage a search
engine app on her device to obtain information was a judgment made by Catherine.
She knew the research capabilities of the search engine app would mean it would act
in a certain way and both limit and filter the results it offered. She considered the
affordance of speed to be paramount, so searching on the device would provide
sufficient information quickly, enabling her to continue on with the creative task. In
this case the app was the actor asserting its agency status on Catherine by leading her
to interact with the app version because of the networks it would generate or the
constraints and limitation of the information it would offer her (Bird, 2009; Callon,
1986, Sorenson, 2009). She chose to use the search engine app at this point in the
process because of what it could offer her over any other device or tool. The search
engine app took on agency status.

4.5 Summary of Discussion

The observations of my senior theatre class over the two month period
focused on the way they interacted with the tool, the way the tool created
opportunities for learning and the relationship between the two. I have discussed the
powerful connection between the current generation and technology. This discussion
uncovered many themes and ideas relating to the power of the tool and how its
capabilities have assisted the learning of these students; how different apps have
hosted interactions in the virtual worlds; how the interaction in the virtual world has
enhanced the collaborative process and extended learning beyond the formal
classroom environment and finally how students are using space and time more
efficiently to increase their learning opportunities. In the next chapter I consolidate
some of these themes into findings. Before I enter the findings stage I wish to
acknowledge a general unexpected finding of this study. In this instance and with
these students, no problems, challenges or concerns were expressed by any
participants or observed by the teacher/researcher. I recognise how unusual this is;
teachers will often observe social networking challenges that they are required to
navigate with their students, as well the challenge of mobile technology distracting students away from learning. The participants in this case study had a highly positive learning experience in terms of the way they interacted and embraced mobile technology and wherever possible they engaged and interacted with their devices as a tool for learning.
Chapter 5 Key Findings

5.1 Key Findings

Here I consolidate the knowledge established in the previous chapter into findings. What emerged from the analysis was that the tool and pedagogy framework served as analytical devices, but there is a deliberate decision in this chapter to focus more significantly on the convergence between the students and the learning with apps that occurred and the realm of sociomaterialism. The findings fell into three categories each with some new discoveries:

- Apps that were used in the formal classroom environment: with findings relating to creative flow and reflection;
- Convergence: where findings relate to agency, affordance and mutually dependant relationships.
- Apps in the informal or virtual world: where findings relate to democracy in the virtual space, space and time, ZPD and the virtual space and the convergence of enhanced collaboration and ZPD.

5.2. The Use of Apps in the Real or Formal Environment

In this section I discuss findings that occurred in the real or formal classroom environment, which relate specifically to creative flow and reflection.

Creative Flow

My theatre students identified that the combination of the device and the instant ability to connect with an app, meant they could maintain the creative flow during their theatrical process (Csikszentmihalyi, 1997). Comparable to findings within Dale’s (2008) ‘podagogy’ research, apps enabled my students to go about their tasks kinaesthetically without extraneous interruption and this heightened level of engagement was fundamental to achieving their learning outcome. These interactions with technology allowed these students to be able to persevere with their theatre task without the interruption of restarting music on a CD, searching for information on a laptop, finding the page of a script or noting down an idea in their journal.

... In theatre we are moving about and using the space and our learning environment is different, so stopping what you are doing and opening a laptop
can be annoying, but getting the phone out to take a picture or make a note of something or to find music or an image it just seems to really fit the things that we do…
(Catherine, Second Round Interview)

Catherine’s interaction with technology extended her engagement with the practical task making a direct link with Vinu et al’s. (2011) research and through this interaction she was able to maintain kinaesthetic creativity by engaging the capabilities and affordances the mobile device offered (Melhuish and Falloon, 2011). As with Banister’s (2010) research, being engaged in the task on their feet, playing, experimenting, digesting, responding and creating rather than having to stop and get behind a laptop or grab pen and paper, enabled my students to be fully immersed in the action of the task. This demonstrates the powerful combination of using technology to assist in the development of a practical task as mentioned by Anderson et al. (2009).

**Reflection**

As previously discussed, reflection is one of the key ways teachers ascertain student understanding (Taylor et al., 2000) as well as one of the most important factors in the process of understanding (Dewey, 1933). This research revealed that students used various recording apps to generate verbal recordings of their process and engagement with the task. As per Melhuish and Falloon (2011) affordances of flexibility and accessibility, having these apps to hand offered students opportunities to discuss their work while they were still in the moment or ‘in action’ (Taylor et al., 2000). The process of speaking into an app generated a stream of consciousness about what and how they were experimenting with the task. These unfiltered verbal recordings were filled with creative ideas, reflections, observations, thoughts and explorations (Jensen, 2008), which the students were able to listen to, review and digest away from the classroom.

*In the classroom there was sometimes an overwhelming amount of information ... but later on ’cause you could stop [the recording] and think, look stuff up, rewind and really listen to what everyone was saying, and actually think about what was happening, then it was much better. So I could reflect on my work at home when I was listening. This meant I could just concentrate on doing the activity...*
(Imogene, Focus Group Discussion).
Utilising the recording function also gave students the confidence and freedom to interact freely with peers, engage in discussion, and undertake practical demonstrations without fear of missing out on content. Comparable to Banister’s (2010) iTouch research, by utilising the other capabilities and apps on their device (such as a video recorder or camera) the students in this study had both verbal and visual reminders of the conversations and content of the lesson, which provided them with information that could be reviewed at a later date. Having time to listen to these recordings and internalise the information stored there in their own time, meant they could process and reflect upon their work in a more informed fashion (Dewey, 1933). Similar to Raphael’s (2009) discoveries, my students were motivated to listen and review their recordings and this interaction with technology resulted in them generating more articulate reflective summaries in their journals and a deeper synthesis of knowledge (Dewey, 1933).

5.3 Convergence: The App, Agency and Affordance

Gaining a deeper understanding of how apps are set up within a mobile device provided me with insight into translation and how the relationship between the learner and device exists (Callon, 1986; Sorenson, 2009). During the study I made many observations of agency where students were making a choice to interact with an app over another tool. These interactions with apps provide evidence of agency status and offer an understanding of how and why these students were harnessing the capabilities these apps could offer them, for desired learning objectives. These observations confirm both the Bird’s (2009) definition of agency, in terms of humans exerting influence over a material object, as well as the theories of Sorenson (2009) regarding how material objects influence human behaviour. Subsequently, these findings align with those of Goodyear and Carvalho (2013) who suggest both sets of affordances can cause occurrences to benefit the learning.

Apps and Agency Status

The combination of the relationship the students have with the device and the understanding of what the device and the app can offer them, led students in this study to make a choice to interact with them over other tools within the drama classroom (Bird, 2009; Fenwick and Edwards, 2010). A smartphone has the capability and
potential to act in many ways (Anderson et al., 2009; Bird, 2009). As outlined in the literature review, the current generation has a strong relationship with mobile technology (Ally, 2009; Amry, 2014; Anderson et al., 2009; Traxler, 2009; Vinu et al., 2011). My students use this technology in their every day lives and similar to Banister’s (2010) observations this meant that they had an understanding of what the apps and devices could offer them in terms of learning opportunities. Offering students the choice to bring the device into the classroom presented them with a range of tools with which to interact and a choice as to whether they would pull out their [smart] phones or open their laptop to gain information. Law’s (2009) theory of ANT was evident as these students were led towards making a choice to interact with apps rather than any other device they had within the classroom. As discussed, some mobile device versions of apps have different functions to that of their desk or laptop counterparts. For example, Catherine understood that the search engine app operated differently from her laptop. She knew the app would limit the information it would offer. She chose to interact with the app version because she understood the way her device would act and what it could offer her; in this case she needed an answer, not a choice of answers. Similarly when students chose to interact with the app version of Pinterest, they understood that with three presses on the app they could access the information they had pinned and stored on to boards. In both these examples, the interaction with the app was made as a result of the relationship my students have with their devices and how they interact with them to access information. In both cases these apps appeared to take on agency status leading the students to interact with the device and the app and making themselves more appealing by offering access to information quickly, efficiently and easily (Bird, 2009, Sorenson, 2009). As Goodyear and Carvalho’s (2013) research suggests it is these occurrences and the way that the students operate the technology to generate a response, that makes these interactions so desirable to the current generation.

**Affordance and the App**

The study also revealed how m-learning affordances facilitated and directed the interactions between the student and the apps during the creative process (Melhuish and Falloon, 2011). A smartphone has the capabilities of many singular portable devices such as the iPod or iTouch, and have replaced the need to have separate devices, such as CD players or other music devices, video recorders and
cameras (Anderson et al., 2009; Banister, 2010; Dale, 2008; Traxler, 2009). I found that the portable, easily accessible affordance of the mobile device and the apps it houses, changed the way in which students could respond to their creative task. The choices as to which device they preferred to interact with was often driven by which app they were engaging with, the affordances of the device and how these together may service their needs. They were choosing to interact with these tools to generate a desired effect. For example the accessibility of the device being to hand in their drama classroom allowed them to use an app to: play the music; see the script; record the scene; take an image and record the conversation. This access enabled the students to engage more freely with their learning (Melhuish and Falloon, 2011).

I could open the app and there were sounds right there so it was quicker and much more convenient for the group. If it’s on your phone you don’t need to search anymore ... you just take out your phone and use it.
(Kelly, Second Round Interviews)

As with Traxler’s (2009) research, this study demonstrated that students utilise and identify a range of apps with numerous functionalities and capabilities to suit their individual need. They generate, create and respond to work both in and out of the space to suit a specific purpose. Again, as a result of these affordances, apps offered them a tool that they could access in an instant to find resources and stimulus for their tasks (Melhuish and Falloon, 2011).

**Mutually Dependent Relationship**

Observations were also made about the mutually developing relationships between the learner and app on the device, placing both the app and the students on equal status (Goodyear and Carvalho, 2013; Simmel, 1990; Sorenson, 2009; Sharp and Beethan, 2013;). Similar to Traxler’s (2009) observations, the device itself and the personalised apps the students placed on them fostered interactions. The points at which each has agency over a learning situation was dependant on the individual app and the way students chose to interact with it at different stages of the process, to accomplish different educational outcomes. As reiterated by Bird (2009), it becomes increasingly difficult to dissect who is controlling the interaction and the networks that exist between the user and the material object (Law, 2009; Fenwick and Edwards, 2010). For example, I observed students interacting with Pinterest during the planning stage of the creative process to build and generate ideas and to stimulate the creative
process. The *Pinterest* app adopted agency status as the app has the power to control the information it gives to the user (Bird, 2009; Sorenson, 2009). Yet, it can be equally argued that my students chose to interact with this app for a desired outcome. They understood the functionalities of *Pinterest* and were aware that they could easily store and quickly retrieve information, which motivated their interactions with this app. Another example is Catherine’s interaction with the search engine app. She chose to interact with the app on the mobile device because she knew that it would assert its agency status by limiting the search results it would make available to her, yet she clearly chose this option because she wanted the app to give her the information she required quickly. Catherine adopted agency status over the search app because her choice to use this app at this time was due to what it could offer her over any other device or tool. Catherine did not require a choice of responses, just a response that she could use to keep working on the task. Both of these interactions demonstrate clear links to Sorenson’s (2009) sociomaterial theory of a mutually beneficial relationship (2009).

### 5.4 Convergence: Apps Used in the Virtual or Informal Classroom

Looking through the lens of social constructivism, there is an acknowledgment that the process of collaborative learning encourages ZDP to occur at a greater rate (Vygotsky, 1964), and that through these interactions my students benefitted from their engagement with one another. When the shared learning environment occurred in the realm of the virtual world I observed a range of behaviours that related to how my students interacted and how these interactions impacted on their learning. These interactions in the virtual space extended the dramatic life beyond the physical space and provided my students with another space with which to interact. It was through this shared networking bubble of *WhatsApp* that I observed individual students feeling empowered to contribute towards conversations. This virtual space allowed them to respond and interact in their own time and in a space of their choosing.

**Democracy in the Virtual Space**

This study demonstrated that the virtual space of *WhatsApp* was a democratic environment (Dewey, 1934; Panitz, 1996) where an individual could contribute and
feel empowered to bring her internalised competency into the space in a range of formats (Amry, 2014).

*WhatsApp offers everyone in the group an opportunity to have an opinion which they might not have expressed in the moment [of the lesson] ... [at home] we can offer a range of other opinions which build on and consolidate the work we have undertaken in the lessons.*

(Catherine, Second Round Interview)

This virtual space extended the collaborative learning that was fostered within the classroom drama space (Nicholson, 2011) and created an equitability that facilitated the quieter voice to contribute, enabling participants to respond on their own terms. Traxler (2009) considers diversity and difference in the way in which learning is delivered to be vital. *WhatsApp* became a space where social interaction occurred that assisted individuals in what Traxler (2009) referred to as a personal learning journey. The ability to read and post contributions at an individual’s own rate and need meant that all students within the *WhatsApp* group felt empowered to contribute in their own way. They interacted as they saw others contribute or chose to passively observe until a time when they wanted to, or could, contribute. As Anderson et al. (2009) reminded us, the current generation interacts in virtual networking apps in their social life, so when my students used apps within a learning context, they were motivated to interact, to share ideas, to converse through written, aural and visual images because this interaction replicated the engagement they had with these spaces in their everyday lives (Vinu et al., 2011). As with the discoveries of Traxler (2009), Raphael, (2007) and Amry (2014) the more willing the students were to engage their learning in these democratic virtual spaces, the more these conversations informed and extended their learning.

**Space and Time**

The ability to take the learning outside of the classroom and into a virtual space resulted in my students extending the life of their drama task beyond the boundaries of the real world and into the virtual environment of *WhatsApp*. Social constructivist interactions and the development of those creative and learning experiences were not only happening within the classroom but were also occurring in this virtual realm (Anderson, 2011; Laurillard, 2013; Vygotsky, 1964; Wagner, 1998). Mobile devices and the spaces such as *WhatsApp* were providing a democratic
collaborative learning environment where interactions could be continued after the lesson and further extended (Amry, 2014; Dewey, 1934; Panitz, 1996; Traxler, 2009). This meant that the students could separate the activities they could undertake in the virtual space, allowing them to focus on tasks they could only do when the group was in the formal space. The interactions and collaborations in both of these spaces proved to be vital in enabling them to complete their task on time. As with Traxler (2009), Raphael (2009) and Amry (2014) this study found that using these spaces opened a powerful gateway into learning opportunities (Sharples et al., 2007). Utilising the virtual environment as a learning space and breaking down the constraints of the learning within the formal classroom environments means that these spaces, as Amry discovered (2014), can be used to deliver content, which can provide a solution to the time related concerns of packed curriculums as raised by Raphael, (2009). This study provided evidence that virtual environments have become legitimate learning spaces.

**ZPD and the Virtual Space**

Social networking environments provides a space that empowered individual learners to contribute because their opinions were viewed and validated collectively. Vygotsky’s (1964) theory of ZPD was clearly evident within this process. Individuals brought their internalised knowledge into this virtual space and could freely question and respond to one another in a format of their choice (Vygotsky, 1964). The collaborative nature of the space enabled the student to enter the conversation quickly, as ideas and conversations were instantly shared, discussed, reflected and responded to amongst the group. Authority was removed from this space as it was unmediated by the teacher. Different to the formal production meeting, even the students who were passively observing, were still receiving the messages and by passing their eye over them were benefitting in some way from the shared contributions. This further reiterated the democratic nature of the space and allowed all group members to feel included in decisions even if absent from school. Due to the functionality of WhatsApp the messages were visible and accessible to all of the members in that virtual group, which meant that all comments were valued equally. Individuals could follow and respond to the conversation away from the formal classroom environment and interact at a moment of their choosing. Linking to Dewey’s (1933) belief in reflective consideration, this interaction enabled them to have time to actively and
carefully consider a more detailed response in their own time and space, and when they felt that they could effectively contribute.

Convergence: Enhanced Collaboration in the Virtual Space and ZPD

Comparable to the discoveries of Amry (2014), this study has shown that mobile devices offer flexibility of learning in both physical and virtual locations. Koole (2009) places mobile learning as the mediator at the core of her research. Her framework suggests, that maximum learning potential is achieved when the interactions between the social, the device and learner converge. This study discovered that by placing this whole interaction within a virtual environment, such as WhatsApp, enhanced collaboration and greater development of ZPD was promoted amongst the learners. Students were focussed when they were inside the bubble created by this social networking app, interacting and offering ideas. Individual and group ZPD (Vygotsky, 1964) was evident as these ideas were building and extending, bouncing around the virtual networking bubble. The democratic nature of the space meant that all participants in the virtual space were in some way influencing the individual and collective ideas (Sorenson, 2009). The functionality of WhatsApp enabled conversation threads to remain visible so members of the group could respond when they had time to do so and did not have to be in the space at the same time to be interacting. Group members were seen to be coming in and out of the space whenever they chose. The interactions between the device, the learner and the social aspects were continuously being reshaped by the way in which the participants were interacting with apps in this space (Laurillard, 2013). The relationship and interactions that the learners had were continued in this virtual space. While these interactions occurred in the virtual realm there was a continuation and extension of ZPD (Vygotsky, 1964). This study goes to prove Traxler’s (2009) and Sharples et al’s. (2007) findings about the powerful learning potential and interaction that occur in the realms of this virtual social networking bubble.

Summary of Findings

During this research investigation I have found that my students interacted with technology to play and stimulate ideas (Anderson et al., 2009; Carroll, 2002; Jensen, 2008), which allowed them to further engage in practical demonstrations,
discussions and interactions within their lessons. The act of interacting with the app during their creative tasks enabled them to keep the creative process going and remain on their feet to physically explore their tasks. Apps also presented them with a tool with which they could collate and store information on and in multiple formats and were able to use in a range of ways within their creative and reflective process. When my students reflected upon their practice or ‘after action’ (Taylor et al., 2000), they were able to use all of the information they had stored on their devices and generate richer and more in-depth analyses of what they achieved during their tasks.

Multimodal literacies are encouraging students to express themselves in ways other than just using words. What was evident in this research project was that my students were able to take their expression of ideas into the virtual world and further explore their tasks. Social constructivist learning (Vygotsky, 1964) continued outside of the formal learning environment and was developed through interactions within the virtual space of Whatsapp. This study has shown that due to this app existing in a virtual environment, the concepts of extended learning through space and time exists.

Finally, further evidence of social constructivist learning and ZPD (Vygotsky, 1964) was observed as a continuous flow of ideas and knowledge was being developed within the social networking bubble, based on what others were bringing into, and responding to, within this space. The material object, in this case the device and the app, was the mediator and subsequent of point passage (Law and Collins, 1992) which placed the human interaction into this virtual space. This resulted in the networks this space hosts further enabling the learning to be continued (Sorenson, 2009; Fenwick and Edwards, 2010). Within this virtual space, networks were both being forged with and constantly reconfigured as a result of the space and the interactions that occurred within it. (Laurillard, 2013).
Chapter 6 Conclusion

The central question of this study was: *What role can apps play for students in a senior theatre class?*

Key findings of this study (in summary):

- My students were motivated to interact with mobile technology and apps because of the relationship that they have with this type of technology and the appeal of m-learning affordances.
- They made a choice to interact with apps over other pieces of technology to service assessment outcomes.
- They used a range of apps for significant educational benefit in their classroom-based tasks to creatively engage with the theatrical process and maintain their creative flow. The unplanned creative opportunities that occurred through these interactions demonstrated that they were able to have a positive creative relationship with apps and that these interactions were producing clear learning discoveries.
- They identified that the apps they already had on their devices offered them the most significant benefit for reflection and creativity.

...in Theatre [Studies] we are moving about and using the space and our learning environment is different, so stopping what you are doing and opening a laptop can be annoying. But getting the phone out to take a picture or make a note of something or to find music or an image, it just seems to really fit the things that we do really well. It’s handy and it just complements the study.
(Catherine, Second Round Interviews)

Other noteworthy findings:

- My students used apps to instantly put themselves into a virtual shared environment, which they then used to host discussions taking their learning outside of the boundaries of the formal classroom.
- When they placed these interactions into a virtual space, the students continued to be motivated to interact with the task.
- This virtual networking bubble provided them with a democratic space where they could collaborate in their own time, extending their learning. When back in the formal classroom they could be more focussed and motivated to accomplish classroom-based tasks.
The flexibility of m-learning

Mobile technology and m-learning has created opportunities for education to occur outside of the formal classroom grid. By utilising virtual spaces teachers and students can be present in a space, which can be in a different location from the physical space they and others inhabit. These spaces are not bound by the same constraints of time and space as the formal classroom and offer flexibility for students and teachers to be in multiple locations and at different times. The idea that teachers and students can use these virtual spaces to educate and deliver content creates opportunities for teaching and learning to continue outside of the formal classroom environment. This study has shown that in an educational setting, m-learning has provided my students with the ability to move between the formal and informal constraints of a classroom and has demonstrated that this has offered them greater flexibility with their learning (Vinu et al., 2011). The access to the virtual space of WhatsApp, a space that my students interact with in their social lives, provided them with a democratic environment that they collaborated in, to share and extend their knowledge.

Limitations and recommendations for further research

The device has limitations. Within education, students still need to be able to write and express their ideas using paper and pen. Apps and mobile technology cannot replace a laptop, as students interact with this piece of technology in a different way. What this study has shown is that mobile technology and apps have the capacity to be used in a wide range of ways and that they can be used in combination (or singularly) to enhance the learning opportunities of drama students during a creative process.

The research project also had it’s limitations. It was limited to observing and drawing conclusions from a small single site. There is opportunity for further research to take place in multiple settings and to collect and compare data from a diverse range of age groups within both the primary and secondary sectors. Data can be obtained and compared from both single sex and co-educational schools as well as drawing information from across the Government, Catholic and Independent sectors. Additionally, the study can be broadened to look at a range of different curriculum areas.
**Recommendations for the future practise**

Since this study, the use of these virtual spaces and the interactions that occur in them have become embedded practise in my drama classroom. My students continue to use them as a primary means to communicate, share ideas, content and interact. As a result of presenting a professional learning workshop at my school, other teachers have been motivated to use apps as both teaching and learning tools. These teachers are encouraging their students to use this technology within their lessons and are setting up more structured learning environments whereby they feel more comfortable with students interacting with mobile devices. Teachers in the English, Humanities, Social Science and Science faculties are encouraging the use of WhatsApp and both teachers and students are forming groups to connect, communicate and collaborate. The school is implementing Puentedura’s (2010) SMAR model and is placing digital technology and their role in education and the classroom at the forefront of their current strategic and pedagogical plan. The Pinterest app continues to be utilised and is now a common feature and means to generate and share ideas in other creative and visual arts subjects. Similar to the result of Amry’s study (2014) there is potential beyond this study for further investigation into how virtual spaces can to be utilised as a teaching spaces, for curriculum to be delivered as well as continuing to offer learners an alternative space to communicate and interact. A senior humanities teacher is trialling (with much success) the use of WhatsApp to deliver curriculum content.

It is empowering as a teacher to give students the freedom to explore how these devices might impact upon their learning, but teachers can often feel that they are not in control of a piece of technology and that the students know more about it than they do. Ozdamli and Cavus (2011) argue that the role of the education must alter to accommodate m-learning “with the Web 2.0 and social network [requiring the] role of the teachers [to alter from] presenter of expert knowledge to a moderator of opposing positions”. (p. 929), which will also require that the role of a teacher to change towards that of a “consultant”. (p. 929). With this Ozdamli and Cavus (2011) advise that teachers “need to be able to identify the students’ interests, relate these interests to topic related learning goals, and offer opportunities to reach these goals that are related to the specific conditions a learner is in.” (p. 929). Understanding apps and their full potential within education is an ever-evolving relationship. Teachers need to
be able to incorporate and accept the interactions that are developed as students use technology to work within real and virtual spaces. Anderson et al. (2009) maintain that it is up to the educator to realise that opportunities are limited by our understanding of the learning capabilities of technology and our management of the technology (mobile device or tool) within the classroom. This opens the door for professional development to assist teachers in developing their practice in these areas of ITC. There are also opportunities for further action research to be undertaken in the field of teaching with ITC and digital apps, perhaps placing the teacher as the central focus.

For me this study has illuminated that the power lies not in the device or the ever-expanding availability of apps, but in the networks and relationships between the device and the learning, and in understanding how influential this interaction can become for education. I have only touched on the ANT theory as a way in which to comprehend the complex webs and relationship between the student and the device. There is potential to undertake further research which can explore this theory in more depth. Researchers have firmly suggested the educational focus must remain on the way m-learning and these tools can be integrated into effective, evidence-driven, innovative practices, so that the learner is empowered and enriched by the learning experience (Melhuish and Falloon, 2011). As educators, providing the freedom to allow learners to make discoveries within the classroom is one of the most empowering things we can offer them. By using the lens of Sociomaterialism within my classroom, my eyes have been opened to see the potential and opportunities that this type of technology can offer learners. In the words of Catherine:

*It's just keeping up with the times, it's like we should be able to use this technology in all of our lessons cause it's how we engage with life ...*

(Catherine, Second Round Interviews)
Bibliography:


Australian Curriculum retrieved at http://www.australiancurriculum.edu.au on 9th April 2015


Dale, C., & Pymm, J. M. (2009). Podagogy The iPod as a learning technology. *Active Learning in Higher Education, 10*(1), 84-96. The online version of this article can be found: http://alh.sagepub.com/content/10/1/84


Department of Education, Employment and Workplace Relations. (2010); Educational Services Australia; ICT professional Learning; National mapping of IYTC-related Professional Learning.


Denzin, N K. (2009). The elephant in the living room: or extending the conversation about the politics of evidence: *Qualitative Research*, 9(2), 139-160. DOI: 10.1177/1468794108098034


Latour, B. (1992). Where are the missing masses? The sociology of a few mundane artifacts.


Macy, L. (2013). Educational Drama in the Age of the 21st Century Literacy; *Education Matters: The Journal of Teaching and Learning, 1*(2)


O’Toole, J. (2006). Doing drama research: Stepping into enquiry in drama, theatre and education. A Drama Australia Publication


Shulman, L (1986). Those who understand: Knowledge growth in Teaching, 15(2) 4-14


Strickland, D S (1988); The Teacher as Researcher: Toward the Extended Professional: Language Arts: 65 (8), 54-764


Victorian Institute of teaching – professional Standards as retrieved: http://www.vit.vic.edu.au/standardsandlearning/Pages/professional-standards.aspx


DOI: 10.1080/13569783.2012.727627


Yin, R (2011) Qualitative research from start to finish: Guilford press New york

**Other work referenced:**


http://www.molenet.org.uk.
http://www.gcflearnfree.org, website created 1998

https://www.Whatsapp.com, website

Figures:

Koole’s framework:
To: Parent/Guardian

Plain Language Statement

Date: January 2014
HREC: 1339642
Full Project Title: Exploration of the role that digital applications (apps) play for students planning, developing and presenting a VCE Theatre Studies Task.
Researcher: Hayley Sandpearl.
Supervisors: Dr Richard Sallis, Dr Christine Sinclair, The Graduate School of Education, The University of Melbourne

I am going to be undertaking a research project at the school as part of my Masters in Education at The University of Melbourne. This research project has received clearance from the Human Research Ethics Committee (HREC) at the University of Melbourne and the Graduate Research School of Education (1339642).

My research project is focused on understanding the relationship that students have with handheld mobile technology, more specifically digital applications (apps), and how the students may use apps within their learning environment. I will be focusing my project on the Drama classroom, and will observe the students’ interaction with technology as they undertake their normal Drama classroom activities.

In this project I am interested to learn more about the role that apps may have within the Drama classroom. As the researcher, I will be observing the extent to which students use applications throughout a specific project, in this case the planning, development and presentation process of a VCE Theatre Studies task. During this process the students will be using a range of techniques and strategies to research, create and experiment with their work. As a researcher, I am interested not in ‘what’ they produce but in ‘how’ they produce it. Using technology is standard classroom practice within this process and I am interested in examining and then analysing the extent to which the use of apps has a role within this process and what this role may be.

I am asking for permission for your daughter to be involved in the research project. If you consent to your daughter participating in this research I will be asking that you agree to her being observed taking part in her usual Drama class. I will still be the usual Drama teacher, and I will not change the lessons in any way. I will be observing and documenting the planning, developing and presenting process throughout Term 1. The students who agree to participate in the research will be asked to complete a questionnaire, take part in one short interview (before the project) after this I may as require them to participate in two more short interviews (during and after the project) and a focus group discussion which will take place during school time, but will not interfere with their studies. The interviews will be about the way in which they might be engaging with apps in their work. I will be audio taping the interviews and transcribing them. I will make these transcripts available to the students so that they can be sure that they are a true and accurate representation of what was said. I will also be audio taping some of the Drama lessons, the audiotaping is for research purposes only, to get a detailed record of what takes place in class. The audiotapes will be used only for the purposes of my research and not for any other reason.

Your daughter’s involvement in the research project ends end of Term 1. At this time their journals will be handed over for assessment. A copy will then be made and kept as research material to be analysed. As the participants are in a dependent relationship with me, I wish to assure you that involvement in this project will not affect any ongoing assessment.

What your daughter tells and shows me as a researcher will be confidential and will not be passed on to anyone else, subject to legal limitations. This issue will be dealt with sensitively and respectfully at all times. Participants will be given a different name to disguise their real identity in any reporting that results from this project including publication and conference presentations. However, due to the small sample size of the class it will not be possible to guarantee your daughter’s anonymity. Arrangements
will be made to protect confidentiality of data, however, it is possible for data to be subject to subpoena, freedom of information request or mandated reporting.

During the project, all data, including hard drives, audio transcripts, journals, questionnaires and any other material will be locked away in the drama office of Lauriston Girls’ School until the completion of the project. After the project is over, all data, including hard drives, audio transcripts, journals, questionnaires and any other material, shall be locked away for five years at the University of Melbourne, and after that it will be destroyed according to the requirements of the universities code of conduct for research.

If you do not wish your daughter to be involved they will still be required to attend Drama classes and complete the VCE Theatre Studies task as usual, but their involvement will not be noted in any way in my research. They will not be interviewed and will not be required to complete the questionnaire or participate in the focus group. I will not use any of the audio taped data. Choosing for your daughter to not to take part in this study will not disadvantage her in anyway. If you do agree for her to take part, you can choose to withdraw her from the project at anytime if you wish to do so. You and your daughter can withdraw anything that has been said or done up to the point of analysis.

It is not anticipated that participation in this study will cause any students any concern or distress, however, should the need arise; they will have the benefit of the school’s counseling services.

I am confident that this project will add to the current research finding regarding technology and Drama. It has the potential to be of benefit to many people connected with education.

The findings of this study will be reported at educational conferences and published in scholarly peer reviewed educational journals. If you would like to see the findings from this study, you may request a summary of the research from the researcher. You can contact me via email or telephone using the details provided at the bottom of this letter.

If you have any questions about this research project you can also contact me personally by emailing hayleyms@unimelb.edu.au

If you need more information then you may contact the:
Executive Officer, Human Research Ethics, The University of Melbourne (03) 8344 8662.

You may also contact the supervisors, Dr Richard Sallis, sallis@unimelb.edu.au or Dr Christine Sinclair, cesi@unimelb.edu.au

It would be appreciated if you could please complete the attached consent form along with a parent/guardian signature and return it to me ASAP.

Yours Sincerely

Hayley Sandpearl
MEd Student
The University of Melbourne  
To: Participant

Plain Language Statement

Date: January 2014
HREC: 1339642
Full Project Title: Exploration of the role that digital applications (apps) play for students planning, developing and presenting a VCE Theatre Studies Task.

Researcher: Hayley Sandpearl
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My research project is focused on understanding the relationship that students have with handheld mobile technology, more specifically digital applications (apps), and how students may use apps within classrooms. I will be focusing my project on the Drama classroom and will observe student interactions with technology as they undertake their normal Drama classroom activities.

In this project I am interested in learning more about the role that apps may have within the Drama classroom. As the researcher, I will be observing the extent to which students use apps throughout a specific project, in this case the planning, development and presentation process of a VCE Theatre Studies task. During this process students ordinarily use a range of techniques and strategies to research, create and experiment with their work. As a researcher, I am interested not in ‘what’ is produced but in ‘how’ it is produced. The use of technology is standard classroom practice within this process and I am interested in examining and then analysing the extent to which the use of apps has a role within this process and what this role may be.

I am asking your parents and yourself for permission for you to be involved in this research project. If you consent to participating in this research, I will be asking you to agree to be observed as you take part in your usual Drama class. I will still be your usual Drama teacher and I will not change the lessons in any way. I will be observing and documenting the way in which you plan, develop and present your work in an assessed task process throughout Term 1. Should you agree to participate in the research, I will be asking you to complete a questionnaire, and take part in one short interview (before the project) after this I may ask you to participate in two more short interviews (during and after the project) and one focus group, which will take place during school time, but which will not interfere with your studies. I will be audio taping the interviews and transcribing them. I will make these transcripts available to you so that you can be sure that they are a true and accurate representation of what was said. I will also be audio taping some of the Drama lessons. The audiotaping is for research purposes only, to get a detailed record of what takes place in class. The audiotapes will be used only for the purposes of my research and not be used for any other reason.

Your involvement in the research project ends at the end of Term 1. At this time your journals will be handed over to me for assessment. A copy will then be made and kept as research material to be analysed. As the participants are in a dependent relationship with me, I wish to assure you that involvement in this project will not affect any ongoing assessment.

What you tell and show me as a researcher will be confidential and will not be passed on to anyone else, subject to legal limitations. This issue will be dealt with sensitively and respectfully at all times. You will be given a different name to disguise your real identity in any reporting that results from this
project, including publication and conference presentations. However, due to the small sample size of the class it will not be possible for me to guarantee your anonymity. Arrangements will be made to protect the confidentiality of data, however, it is possible for data to be subject to subpoena, freedom of information request or mandated reporting.

During the project, all data, including hard drives, audio transcripts, journals, questionnaires and any other material will be locked away in the drama office of Lauriston Girls’ School until the completion of the project. After the project is over, all data, including hard drives, audio transcripts, journals, questionnaires and any other material, will be locked away for five years at the MGSE, University of Melbourne and after that it will be destroyed according to the requirements of the universities code of conduct for research.

If you do not wish to be involved you will still be required to attend Drama classes and complete the VCE Theatre Studies task as usual, but your involvement in Drama classes will not be noted in any way in my research. Choosing to not to take part in this study will not disadvantage you in any way. If you do agree to take part, you can choose to withdraw from the project at anytime if you wish to do so. You can withdraw anything that has been said or done up to the point of analysis.

It is not anticipated that participation in this study will cause you any concern or distress, however, should the need arise; you will have the benefit of the school’s counseling services.

I am confident that this project will add to the current research finding regarding technology and Drama. It has the potential to be of benefit to many people connected with education.

The findings of this study will be reported at educational conferences and published in scholarly peer reviewed educational journals. If you would like to see the findings from this study, you may request a summary of the research from the researcher. You can contact me via email or telephone using the details provided at the bottom of this letter.

If you have any questions about this research project you can also contact me personally by emailing hayleyms@unimelb.edu.au

If you need more information then you may contact the: Executive Officer, Human Research Ethics, The University of Melbourne (03) 8344 8662.

You may also contact the supervisors, Dr Richard Sallis, sallis@unimelb.edu.au or Dr Christine Sinclair, cesi@unimelb.edu.au

It would be appreciated if you could please complete the attached consent form along with a parent/guardian signature and return it to me ASAP.

Yours Sincerely

Hayley Sandpearl
MEd Student
The University of Melbourne
Parental Consent Form

Date: January 2014
HREC: 1339642
Full Project Title: Exploration of the role that digital applications (apps) play for students planning, developing and presenting a VCE Theatre Studies task.
Researcher: Hayley Sandpearl.
Supervisors: Dr Richard Sallis, Dr Christine Sinclair, the Graduate School of Education, The University of Melbourne

Please return this consent form to your drama teacher/researcher: Hayley Sandpearl. Once signed this form is retained by the researcher.

Name of Parent/Guardian____________________________________________

My daughter (please insert name of you daughter here)_______________________________________________________________

and I have read the attached letter’s inviting her to participate in the research project to be conducted at Lauriston Girls’ School and understand and agree to accept the following:

• That her participation in the project is voluntary and that she has the right to withdraw at any stage and to withdraw any data she has supplied (up to the point of analysis) □ Y □ N

• That she is to be observed during her regular in the Drama class during term 1. □ Y □ N

• That she will be audio taped during some of the Drama classes. □ Y □ N

• That she is to be interviewed on at least one up to three occasions and that these sessions will be audio taped and subsequently transcribed. □ Y □ N

• That she will complete one questionnaires as part of this research project. □ Y □ N

• That she may be part of one focus group session and that this session will be audio taped and subsequently transcribed. □ Y □ N

• That the audio taping of the Drama sessions is for research purposes and will not be used for any other purpose and will be held by the researcher and then passed to the University of Melbourne, where it will be stored securely for five years and then destroyed in accordance with the universities Code of Conduct for research. □ Y □ N

• That she will not be identified in any publication or report that arises from this research. □ Y □ N
• That I understand that due to the small sample size it is impossible to guarantee anonymity. □ Y □ N

• That we are completely satisfied with the legal limitations of confidentiality, the level of confidentiality of the information and the procedure for safeguarding it. □ Y □ N

• The steps being put in place by the research and supervisor to safeguard the welfare of the students taking part. □ Y □ N

Signed (student who will be a participant in the project)__________________________________________

Signed (Parent/Guardian)________________________________________________________________________

Date: /2014

Comments:
**Date:** November 2013  
**HREC:** 1339642  
**Full Project Title:** Exploration of the role that digital applications (apps) play for students creating, developing and presenting a VCE Theatre Studies task.  
**Researcher**  
Hayley Sandpearl.  
**Supervisors**  
Dr Richard Sallis, Dr Christine Sinclair, The Graduate School of Education, The University of Melbourne

**Name:**

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I would hate to lose my mobile handheld devices.</td>
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<td>2. Mobile handheld devices are a valuable part of my everyday life.</td>
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<td>3. I use applications on my mobile handheld device.</td>
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<td>4. I consider applications a useful way to keep up with my school work.</td>
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<td>5. I use application in my school work</td>
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6. What Mobile Handheld devices do you own?

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

7. Please rank the use of each Mobile device. *Using the terms in column 1 rank each device (up to 3) from 1-4 focusing on how you most use it.*

| Device 1 is | Device 2 is | Device 3 is |
8. Can you list your top 10 apps and what you use them for?

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<thead>
<tr>
<th>App</th>
<th>Use</th>
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9. Could you identify some apps, which you might find useful in the drama classroom and identify the purpose/use or function this might have?

<table>
<thead>
<tr>
<th>App</th>
<th>Function</th>
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<p>| | |</p>
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**Any additional comments:**

Thank you for completing this questionnaire
Appendix 5

These questions will be made available to the participants via email 1 week before the interviews/focus groups take place

Round 1 - Structured interview Questions

1. Do you currently use apps in the Drama classroom?

2. Can you tell me about the apps you are already using in the Drama classroom?

3. Can you expand upon the ways in which you are currently using apps in your Drama work?

4. What do you consider to be the differences between the planning, developing, presenting phases of your Theatre Studies process?

5. In what ways do you expect you could use apps in the planning of your VCE Theatre Studies task?

6. In what ways do you expect you could use apps in the developing of your VCE Theatre Studies task?

7. In what ways do you expect you could use apps in the presentation of your VCE Theatre Studies task?
Round 2
Semi-structured Indicative Questions

• How have you been using apps in the process of planning, developing and presenting task so far?

• Can you identify any apps you have found particularly helpful in the planning of your task?

• Can you explain in what way they have been helpful to you?

• What do you consider to be the benefits of using this app in this part of the process?

• Can you identify any apps you have found particularly helpful in the development of your task?

• Can you explain in what way they have been helpful to you?

• What do you consider to be the benefits of using this app in this part of the process?

• Can you identify any moments in this process when you have chosen to use another strategy to plan or develop your task, rather than using an app?

• What do you consider to have been the benefits of using that alternative strategy in this part of the process?

• Do you consider that using apps is having an impact on the way in which you are engaging with the Theatre Studies task?
Round 3

Semi structured Indicative Questions

- In what ways did you find you were using apps to plan your task?
- In what ways did you find you were using apps to develop your task?
- In what ways did you find you were using apps to present your task?
- Did you notice that you were using apps differently for different phases? Can you explain?
- Are there any apps that you have found particularly helpful?
- Can you explain in what way you have found these to be helpful?
- Did you find a point in the process when you noticed you were using any other strategy more than using an app?
- Do you consider that there have been any limitations on using apps at any specific point in your process?
- Do you consider that there have been any benefits of using apps at any specific times in the process?
- As a result of being involved in this study, do you consider that you have used applications more or less within the drama classroom?
- As a result of being involved in this study, do you consider that you have used applications more or less within any other classroom environment?
Semi Structured Focus group Questions –

- Can you tell me about any experiences that you are having, using applications in the drama classroom?

- Are you finding using apps a useful strategy within the Drama classroom?

- At which point in the planning and developing of your presentation are you finding the use of apps most helpful?

- Is there anything that is surprising you about the way in which you are using apps?

- Can you share any specific apps you are using and how you are using them with the group?

- Do you consider that you are using apps more, less or the same as you have done in the past?
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Author/s:
Sandpearl, Hayley

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Digital apps and learning in a senior theatre class

Date:
2016

Persistent Link:
http://hdl.handle.net/11343/91701

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