

Mobile Engagement at Scottsdale Community College:

The Apple iPad in an English Honors Class

by

Larry Tech Tualla

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

Approved October 2011 by the
Graduate Supervisory Committee:

Christopher Michael Clark, Chair
Alfredo G. de los Santos Jr.
Lisa C. Young

ARIZONA STATE UNIVERSITY

December 2011

ABSTRACT

This dissertation reports on an action research study that sought to discover how a new WiFi, tablet computing device, the Apple iPad, affected, enhanced, and impacted student engagement in an English Honors course at Scottsdale Community College. The researcher was also the instructor in the two semester, first-year, college composition sequence (English 101/102) in which all 18 students were provided the new Apple iPad tablet computing device. The researcher described how students adapted the Apple iPads to their academic lives, assessed iPad compatibility with current instructional technology systems, and interviewed participating students to document their beliefs about whether iPad activities enhanced the course.

At the conclusion of the college composition sequence, 13 students agreed to participate in focus groups to describe how they made use of the iPad and to report on how the iPad influenced their engagement. Among other findings, students reported that there were compatibility problems with current SCC instructional technology systems, that the iPad increased their efficiency in completing informal educational tasks, but that the iPad was not useful for doing word processing and research. Recommendations for future use of the iPad in this course include reducing the number of iPads accessing the WiFi network at the same time, piloting the use of iPad word processing applications, researching more “mobile-friendly” web sites and documents, and developing innovative assignments that take advantage of iPad capabilities.

DEDICATION

I dedicate this dissertation to my mother, Bella Tech Tualla, the inspirational foundation to my success and the future success of my daughters. I love you, Mom. I dedicate this to my father, Larry Galaviz Tualla, for providing the support and discipline that has made me the man and educator that I am today. I must also include my sister, Hannah Tech Tualla, who earned both a Master of Science in Nursing (MSN) and a Nurse Practitioner (NP) degree, compelling me to “one-up” her. Last, but certainly not least, to my beautiful wife, Lyn and my awesome daughters, Zarah and Charlee because it is for them that I do.

ACKNOWLEDGMENTS

Of course the process and this dissertation are not possible to do alone. I must first acknowledge the firm direction, genuine compassion, and most importantly, the language that Dr. Chris M. Clark provided me as my dissertation chair. Thanks for the invaluable advice and initiating me into the vital and dynamic world of action research. A warm and heartfelt “thank you, sir” goes to my dissertation co-chair, Dr. Alfredo G. de los Santos Jr. I am indebted to the *pilón* that is your “fuddy-duddy,” English teacher burden. I also appreciate the cultural and historical context that illuminated the path for a person like me. I would also like to Dr. Lisa C. Young for the coffee, the support, and the enthusiasm you showed for my research. Last, but not least, I must acknowledge past teachers, professors, colleagues and leaders that pointed me in my direction and taught me much more than what can be captured within the confines of a four-walled classroom: Mr. Bausch, Mr. Mangin, Ms. Rowe, Dr. James Fitzmaurice, Dr. Laura Gray-Rosendale, Dr. Sibylle Gruber, Dr. Carmen Coracides, Dr. Barbara Fahey, Dr. Patricia Medeiros, Dr. Anneliese Harper, Julie Knapp and Ann Bixler.

TABLE OF CONTENTS

	Page
LIST OF TABLES.....	viii
CHAPTER	
1. INTRODUCTION.....	1
Purpose of the Study	5
Limitations.....	7
Research Questions.....	8
Definitions.....	9
2. LITERATURE REVIEW.....	11
The Community College.....	11
Community College Students.....	11
Student Engagement.....	12
The Digital Native Profile.....	15
Mobile Learning.....	16
iPads in Higher Education.....	19
iPad Pilot Studies.....	20
Participatory Action Research.....	22
Chapter Summary.....	23
3. RESEARCH DESIGN.....	25
Context.....	25
Scottsdale Community College.....	26

CHAPTER	Page
iPad Pilot Program.....	26
Description of Intervention/Action.....	27
ENG 101 Honors, Fall 2010.....	27
ENG 102 Honors, Spring 2011.....	30
iPad Assignments.....	30
Data Collection Methodology.....	34
Participants.....	35
Focus Groups.....	36
Data Collection Procedures.....	37
iPhone 3G.....	38
iPad.....	40
4. ANALYSIS AND RESULTS.....	42
Theme Identification.....	42
Data Analysis Procedures.....	44
General Observations.....	45
Educational Activities.....	46
Notes App.....	47
Immediate Web Browsing.....	51
Email Communication.....	56
Effects on Engagement.....	58
Impact at Home.....	58

CHAPTER		Page
	Anytime, Anyplace, Spontaneity Impact.....	59
	Relevance for English Honors?.....	60
	Bridge Over the Digital Divide?.....	62
	Suggested Improvements.....	63
	Better Campus WiFi Access.....	64
	Mobile Friendly Interface.....	65
	Word Processing.....	66
5.	CONCLUSION.....	70
	Lessons Learned.....	70
	Researcher Reflections.....	73
	Short Term Consequences of the Study.....	75
	Implications.....	76
	REFERENCES.....	79
APPENDIX		
A.	INSTITUTIONAL REVIEW BOARD APPROVAL.....	85
B.	DEMOGRAPHIC QUESTIONNAIRE.....	87
C.	PRIVACY/OPT-OUT STATEMENT.....	89
D.	PILOT STUDY INTERVIEW SCRIPT.....	91
E.	FOCUS GROUP SIGN-UP SHEET.....	93
F.	FOCUS GROUP INTERVIEW SCRIPT.....	95
G.	BIOGRAPHY VIDEO ASSIGNMENT PROMPT.....	98

APPENDIX		Page
H.	GROUP FIELD RESEARCH ASSIGNMENT PROMPT..	100
I.	THE ANTI-ADVERTISEMENT ASSIGNMENT PROMPT.....	102
J.	RESEARCH ADVERTISEMENT ASSIGNMENT PROMPT.....	104

LIST OF TABLES

Table		Page
1.	Frequency of Themes Related to Student Engagement	47
2.	Frequency of Themes Related to Suggested Improvement.....	63

Chapter 1 Introduction

The purpose for this doctoral action research study was to discover if and how a new WiFi, mobile, tablet computing device affected an English Honors class at Scottsdale Community College (SCC). Not only was I the researcher for this study, but I was also the instructor for the two-semester, first-year, college composition sequence (ENG 101/102) in which all 18 students were provided Apple iPads. This study sought to gather data that would identify how students adapted the technology to their academic lives, if the iPad was compatible with SCC instructional technology systems, and if the iPad enhanced the course.

These are challenging times for higher education in Arizona. Community college enrollment rapidly increases as state and county support decreases. The students who do enroll are also challenged as they must juggle several, competing obligations. Many community college students will need to work while going to college, many will have to enroll part time, many will have to care for family and dependents, and many will likely spend a significant time commuting. These challenges directly affect the time spent on academic activities and therefore will directly affect their chances for academic success. While the Vice President Joe Biden's Middle Class Task Force (Middle Class Task Force, 2010) classifies these challenges as "barriers" that should be removed, it is important to also be aware of potential opportunities that may better integrate with students' dynamic lives. As community college students are increasingly more mobile people (commuting/traveling between work, school, and home) the institution must challenge itself to proactively develop mobile solutions that increase opportunities

for effective engagement. Key to this development is data collection that will help to characterize student mobile behavior and perspectives so that policy and classroom practice can be effectively informed.

As a ten-year faculty member of the Scottsdale Community College (SCC) Department of English, I am responsible for not only teaching standards of college level, critical writing and reading but also for introducing students to expectations of academic culture in preparation for their professional success. However, several new factors prompt me to evaluate who the students are. How will they affect academic culture? What is success in a time of financial uncertainty? As enrollment growth is predicted and a shifting student profile is anticipated, I argue that it is also beneficial to take cues from the emerging technologies and students' reliance on mobile communication and computing devices (Hussar & Bailey, 2009; Maricopa County Community College District, 2011; Office of Institutional Research, Planning, and Assessment (OIRPA), 2008; Prensky 2001a, 2001b; Western Interstate Commission for Higher Education, 2008). One of the challenges for our English department is one that parallels the broader challenge of the community college institution in general: How to better engage a shifting student profile as well as address their changing needs?

I have been trying to address this challenge since the beginning of my career in my attempts to put forth an image of the institution that is modern and nimble and sensitive to accessibility. My answer is technology. In fact, my pedagogical hallmark is the application and reliance on computers, multi-media, and the Internet as a way to increase access and to enhance student engagement in

ways that are familiar to them. However, my pedagogical and technological choices also face new challenges as my conception of student technological literacy evolves.

Many SCC students rely on computing functions, electronic communications, and Internet access through mobile devices. EDUCAUSE Center for Applied Research (ECAR, 2010) found that 72.1% of SCC students surveyed owned a handheld device that was capable of accessing the Internet, 63.2% access the Internet with their hand held devices several times a week or daily, 89.3% stated that they email from their hand held device, and 83.3% use their hand held devices to keep updated on news, weather, specific facts, etc. Prensky (2001a) argues that there has been a shift in the way students communicate and access information electronically. This has led me to conclude that students should not only have access at any time, but also must have access at any place and with any device. This conclusion has lead me to a commitment to try to enhance SCC's English program by effectively utilizing mobile learning (m-Learning) theory with the growing proliferation in mobile, tablet computing devices such as Apple's iPad. The purpose of this action research study is to document the costs and benefits of providing me and my students with Apple iPads in a two-semester English Honors course.

Providing a small group of community college students with the latest in tablet technology should not be written off as seemingly expensive and unrealistic luxury at a time when Arizona's financial challenges pose threats to every community college's base budget. Rather, I will position mobile technology

within a context that hopes to maximize success for students and also the institution. Part of the challenge stems from predicted but unprecedented growth. Research by WICHE (2008) and the NCES (2009) indicate that Arizona will experience an explosive demand for undergraduate education over the next decade. As one of the largest post-secondary education providers in the nation, the Maricopa County Community College District (MCCCD) already has begun to see the effects of the growing demand, increasing from 118,665 in fall 2007 to a decade high of 141,705 in fall 2010. SCC's enrollment gains have been steady since fall 2008 growing from 10,077 students to 11,257 by fall 2010 (MCCCD Office of Institutional Effectiveness, 2011).

Research also indicates that many community college students who are members of the recently-admitted larger cohort are people who must deal with challenges that will negatively affect the time they have to engage with their educational activities and therefore their academic success. Today, community college students are more likely to work full or part time, will more likely enroll part time, will more likely take care of dependents, and are more likely to spend significant time commuting (OIRPA, 2008). However, Prensky's (2001a) research documents one way in which contemporary community college students are reconciling these challenges—through a reliance on technology, specifically mobile technologies such as WiFi lap-tops, smart phones, and more recently mobile WiFi tablets. While much is known about the impact of computers and the Internet on classroom engagement, data regarding the impact of tablets in the classroom is far less available, given the very recent introduction of the iPad.

Purpose of Study

In fall 2010, through funding provided by an internal grant, SCC's Department of English initiated an iPad Pilot Program. This institutional commitment to support the pilot program indicated a shift from a "wait-and-see" attitude toward technology to a more proactive "let's prime the pump and see what happens" approach of early-adopters. The grant support indicated a desire to explore how the new tablet technology can enhance student success and educational engagement. As my reputation for using technology was well known at SCC, one of my Honors English classes was selected to pilot the iPad program. The study had several purposes: to collect data on 1) the costs of deployment of the iPad, 2) its effects on SCC's technology infrastructure, 3) its effects on student engagement and efficiency, and 4) its enhancement of curriculum and pedagogy. The notion of potential benefits from both the iPad itself as well as from the larger Pilot Program was met with much excitement at SCC during the summer of 2010.

However, early in the fall 2010 semester it was obvious to those of us (myself and students) familiar with the traditional personal computer (PC) that the iPad was not a replacement for the computer, not the proverbial "lap-top killer." Faculty and students began to encounter limitations to iPad functionality in accessing the SCC wireless network, in navigating websites, and in compatibility with the SCC cloud computing platform, mySCC, and in accessing the Blackboard Course Management System. In fact, through informal analysis and observation, it became clear that trying to use the iPad to fully replace a computer negatively affected student engagement. It also became clear that integrating the

use of the iPad in my English class would fundamentally change what and how I teach and would change the time it took me to prepare for teaching, and to respond to my students following class meetings.

The easy thing to do would have been to use my position as a technology expert to conclude that the iPad was not a useful tool for a college composition class. However, my interest in Paulo Freire's dialogic processes coupled with my interest in qualitative research methodology led me to re-think and to redesign the pilot program for the spring 2011 semester. As practitioner of student-centered curriculum, pedagogy, and classroom policy, it seemed a natural extension to utilize qualitative research methods to position my students as research participants who are experts of the phenomenon of interest (Auerbach & Silverstein, 2003; Creswell, 2009, 2007; Freire, 1997). In this case, I saw my students as experts and authorities on their own experiences, good and bad, with trying to make use of the iPad in my course. Instead of assessing the iPad's educational value based upon *my* pedagogical preferences and curricular framework, I wanted to describe if and how students adapted the iPad to enhance their academic engagement. I was interested in learning whether my students made use of the iPad to engage positively with educational activities beyond my classroom as well as in my class. Using qualitative research methods for the study is the most appropriate method for discovering themes that students articulate when they describe the iPad's educational benefits and its effects on their engagement. Based upon a descriptive analysis of their data, I identified emergent themes that I hope will inform and enhance SCC policy decisions and

actions to enhance the benefits of WiFi mobile tablet technology in the English classroom.

Limitations

In this action research dissertation, I collected self-reported data from my students about their use of the iPad and their perceptions of the effects of having an iPad on their academic engagement during the spring 2011 semester. Fall 2010 data are not presented in this dissertation, but will be mentioned where appropriate in order to provide context for the spring 2011 action/intervention and data collection. The Arizona State University Office of Research Integrity and Assurance approved data collection only for the spring 2011 semester forward.

For the purposes of this dissertation, student engagement is defined as the amount of time one spends on academic activities, in academic spaces (e.g., the classroom, the library, etc), or with persons related to the institution (classmates, professors, Astin, 1984). Therefore the primary criterion for evaluating the effects of iPad availability is how students say it affected their time and involvement with educational activities, information, and socialization.

Finally, this action research dissertation is limited by the fact that this description and analysis is a small-scale, short duration qualitative study. The data are primarily a subjective articulation of the research participants' remembered experiences and attributions about their iPad use in a community college English Honors class. My conclusions and recommendations are not intended to be generalizable. Rather, the purpose of this qualitative action

research study is to understand the experiences and meanings associated with the participants' educational engagement that they attribute to the use of the iPad.

Research Questions

After designing and implementing iPad assignments that I hoped would enhance the content and curriculum of ENG 102 Honors, I turned my attention to designing the broader research study. I intended to discover not only how the ENG 102 Honors iPad cohort used the iPad to engage with their academic activities but also what benefits they may have realized from the implementation. By positioning students as authorities of their own experiences and using their responses to identify themes, I learned about both positive and negative experiences related to their engagement. In doing so I also discovered how more purposeful m-learning activities can enhance and increase meaningful student engagement.

Four broad research questions guided the dissertation study:

- 1) What do students report about educational activities that involved the use of the iPad?
- 2) In what ways did the iPad affect educational engagement, according to student reports?
- 3) In what ways did the iPad impact motivation and engagement in an ENG 102 Honors course, as reported by participating students?
- 4) What might be done to make the iPad more useful as a learning tool at Scottsdale Community College?

Definitions

This section will define terminology that will be used throughout the dissertation report. Some readers may find these terms unfamiliar as they refer to specific technologies or systems used at SCC and MCCCDC, may be unfamiliar technical terms, or because they may not be familiar with the technologies that Apple produces.

- *Blackboard Course Management System (Blackboard)*: An academic software program that utilizes the Internet to advance teaching and learning in three primary areas: instruction, communication and assessment. Individual instructors can customize a basic, online course shell by creating original content, promote collaboration and communication, and assess students' work. Currently, Blackboard is used widely throughout MCCCDC ("Blackboard Learn," 2011).
- *Cloud Computing*: A new technology platform that can deliver programs, software, access to data, and file storage through an external, web based network instead of having the software housed on the user's personal computer hard drive (Tadger, 2010).
- *Gigabyte (GB)*: A large unit of data storage space. One gigabyte equals 1,000,000,000 bytes. The Apple iPad is available with 16GB, 32GB, and 64GB storage capacity options (University Information Technology Services, 2011a).

- *iPad*: Apple's WiFi tablet computing device that offers a touch-screen high-resolution display, Internet access capability, and a picture camera. The iPad functions as a platform primarily for viewing and consuming media rather than as a communication and text creating device (Apple, 2011).
- *Mobile communications device*: A small handheld device such as a personal digital assistant (PDA) or cellular phone/smart phone that also offers other computing functions as well as WiFi capability and web browsing (Doe, 2009).
- *Mobile computing devices*: Any technology that offers computing capability in a compact and portable package (Doe, 2009).
- *Mobile learning*: Refers to a capability or instructional delivery method that offers educational activities at any time and any place usually with the aid of a mobile computing or mobile communications device (Kulkusa-Hulme & Traxler, 2005).
- *Smart phone*: Usually considered to be a high-end mobile communications device that also serves as a personal digital assistant (PDA) and has WiFi and web browsing functions (Corbeil & Valdes-Corbeil, 2007).
- *WiFi*: A type of local area network that utilizes high frequency radio signals to send and receive data within a limited space (hot spot) usually of a couple hundred of feet (University Information Technology Services, 2011b).

Chapter 2 Literature Review

In this literature review I summarize research that informed my thinking about ways to implement and evaluate the use of mobile technology in a community college course. The topics reviewed are: 1) the community college, 2) community college student engagement profile, 3) the digital native, 4) mobile learning, 5) the iPad in higher education, and 6) participatory action research.

The Community College

The community college is usually a publicly funded, post-secondary educational institution accredited to grant an associate's degree. The community college is a unique American, undergraduate educational institution that accounts for nearly half of the nation's post-secondary enrollment. Because of its open admissions policy, the community college often is viewed as nimble pillar of the community it serves by serving many different local needs. It serves a diverse and unique mission through work force development, developmental education, adult education, continuing education, and college transfer (Cohen & Brawer, 2008).

Community College Students

Community college students are different than four-year university student. The Community College Survey of Student Engagement (CCSSE, OIRPA, 2008) has found that up 62% of community college students will enroll part-time, 56% will work more than 20 hours per week, 33% will spend 11 or more hours caring for dependents, and 21% will spend six to 20 hours commuting to and from school.

According to CCSSE's Office of Institutional Research, Planning, and Assessment (2008), one of many disadvantages that community college students face is that many institutions do not adjust policies and practices according to what they know about their students. These institutions and their policies and practices seem unsympathetic to well-documented student needs and constraints. The *Imagine Success: Engaging Entering Students* survey (CCCSE, 2008) calls for a redesign of educational practices that resonates with the reality of students' lives and characteristics. The redesigns proposed by the authors of this survey report should integrate practices proven successful through research and evidence. Furthermore, the authors recommend implementing these practices at a scale that redefines the experience for all students rather than for an exclusive few (CCCSE, 2008).

Student Engagement

Astin (1984) defines student involvement (engagement) as the amount of physical and psychological time and energy that a student devotes to academic experiences and activities. These experiences can run the gamut from time spent studying to the amount of time spent on campus, participation with academic organizations, and interactions with faculty, staff and other students. Involvement focuses on the behavioral processes that facilitate student development. Key to the engagement processes is time—the amount of time and presumed effort that students devote to educational activities. Astin (1984) acknowledges that educators are competing with students' other priorities (work, family and friends, hobbies) within a finite amount of time. In his theory of student involvement,

Astin (1984) postulates that effective higher educational policy is directly connected to its capacity to *increase students' involvement with academic experiences*.

Tinto (1997) locates the classroom at the center of the academic activity structure. The encounters occurring within the classroom, particularly student-to-student interactions, are the key units of Tinto's definition of academic experience. Within this framework Tinto (1997) asserts that for commuter students the classroom is the primary locus of academic and social involvement. His research developed into studies that sought to redefine students' learning experiences through restructuring classrooms and reforming faculty practices in ways that reduce student isolation. Tinto found that the more social connections students made (student-student and student-faculty) the more likely students were to be academically involved (1997). Tinto also recognized the importance of increasing involvement in settings where involvement is limited (1997).

The National Survey of Student Engagement (NSSE) and its two-year institution counterpart CCSSE have helped to solidify the construct of student engagement as a significant higher education policy concern by demonstrating that the construct can be reliably measured (Kuh, 2009). Both NSSE and CCSSE focus on behavior within student academic experiences that correlate positively with student success. However, more recent research expands the meaning of student engagement to include measures of the quality of involvement in productive educational activities (Kuh, 2009).

Kuh (2008b) claims student engagement is the most important measure of successful higher education practice for the 21st century. He argues that institutions and campuses must identify and support high impact activities that maximize academic integration and engagement. Kuh (2008a) defines high impact education activities as practices that demand that students devote a significant amount of time and effort to meaningful learning tasks. Many of these tasks are performed over a significant period of time, which compel students to make daily decisions to continue to engage. This daily habit of re-commitment, in turn, can increase their dedication to task completion and subsequently can increase their dedication to the course, internship, program of study, and even to the institution itself. Kuh (2008a) has found that high impact educational activities also require a high level of interaction with faculty members and with other classmates. These interactions can promote integration and engagement through ongoing conversations, collaboration and negotiation with others who hold a wide range of values, knowledge, skill, and perspectives.

The notion of effective educational activities that enhance student engagement has been utilized at the community college level since the early 1990s through the work of Rendón (1993). Her theory of validation helps to conceptualize positive engagement outcomes that result from effective educational activities. In a qualitative study of two community colleges, Rendón (1993) articulated how students' learning experiences can be validated through faculty who 1) work closely with students to push them to achieve high standards, 2) encourage collaborative learning, and 3) respect students as people and

acknowledge individuals' life experiences. For typical community college students, high levels of academic involvement are difficult to achieve, usually due to the limiting effects of their prior schooling experiences. Rendón (1983, 1993, 2000, 2002) also found that, particularly for community college students, getting involved (early and quickly) was key to making the transition into post secondary educational life and that validating education experiences is crucial to transforming “at-risk” students into engaged learners.

The Digital Native Profile

In addition to the shifting demographic and educational profile, many community college students also may represent aspects of a broader, rather modern conceptualization: *the digital native*. Digital natives may be students who represent a generation that has grown up with the ubiquitous presence of technology. They have grown up with mobile phones, computers and the Internet at their disposal, and communication through email, instant messaging, and text messaging have always been familiar methods of contact (Prensky, 2001a; 2001b). Routine access of these technologies has caused a fundamental change in the way students think and communicate (Collins & Halverson, 2009; Prensky, 2001a). Digital natives are used to receiving information very rapidly; they can parallel-process and multi task (Prensky, 2001b). In this regard, according to Collins and Halverson (2009) technology improves the way students think in much the same ways tools improved the way the body worked during the Industrial Revolution. Additionally, a Digital Revolution has changed the way students conceptualize *community*. Social media (e.g. online forums, Facebook,

and Twitter) can form communities defined by interests rather than defined solely as a physical place (Collins & Halverson, 2009).

Further compounding digital natives' shifting information access points and communication and socialization practices is an emergent "anytime-anywhere" capability through mobile devices. A mobile computing or communications device is any small, usually handheld, electronic that is designed to provide convenient computing and communication when a standard computer or laptop is not practical (Corbeil & Valdes-Corbeil, 2007; Doe, 2009; Husain & Adeeb, 2009). A mobile (or handheld) device can be any technology that has mobile computing capability such as a hand held computer, ultra small laptop, tablet, or a palm top. A mobile communications device may be a personal digital assistant (PDA) or a cell phone with additional computing features (also known as a smart phone). These technologies typically have a touch input display screen or a miniature keyboard. Many of these technologies have features or applications that may make them useful and practical for educators, teachers, administrators, and students (Caverly, Ward & Caverly, 2009; Doe, 2009; Traxler, 2007). By 2020, it is predicted that a hand held, mobile device will be the primary means of accessing the Internet across the world (Anderson & Rainie, 2008).

Mobile Learning

The proliferation of and subsequent pervasiveness of mobile technology and its acquisition has given rise to a new and innovative educational opportunity: mobile learning or m-learning. Early definitions focused primarily on the use of mobile technologies as a communications device used within an educational

context; however, current definitions may include both a focus on the means used to deliver content, information, and data to a person or conceptualizing the learner/consumer as a mobile being who is ready and expecting to access information and data in places and at times previously never conceived (Traxler, 2002). According to Ting (2005, p.1), “Mobile learning is the use of mobile or wireless devices for learning while the learner is on the move.” Researchers studying the application of m-learning in a Chinese university setting define it as “active educational content delivered through mobile phones” (Wang, Shen, Novak, & Pan, 2009, p. 673). Mobile learning is “concerned with learner mobility, in the sense that learners should be able to engage in educational activities without the constraints of having to do so in a tightly delimited physical location” (Kulkusa-Hulme & Traxler, 2005, p 1). And, still others conceive mobile learning as the behavior of learners who “attend a variety of learning activities, including to search for knowledge, participate in discussion groups and access informational contents online” (Huang, Lin & Chuang, 2007).

There is a growing body of evidence that m-learning can increase student involvement, although most studies are international and small scale. Higher education in China has long suffered from a lack of interactivity as students sit and listen to lecture (a primary learning information delivery method, Wang et al., 2009). In a pilot study, mobile phones (the most prevalent mobile device in China) were used to expand educational experiences further into students’ daily routine. The study showed that interaction between instructors, students, and administrators increased. Educational and informational interaction between

students ranked the highest, and interaction between student and teacher came second. The increased frequency is atypical in Chinese higher education (Wang, et al., 2009).

Researchers in Taiwan have found favorable attitudes toward mobile learning. M-Learning increased students' efficiency in communications with instructors or administrators. These attitudes were correlated with perceived usefulness and enjoyment (Huang, Lin & Chuang, 2007). In another Taiwanese study, researchers found that mobile phones used to augment "paper-based" learning could support students' planning, prioritizing, and management of learning activities (Chao & Chen, 2009). In Saudi Arabia, mobile learning was shown to increase retention among female undergraduate medical students. A majority of study participants supported the notion that mobile learning increases flexibility of access to resources and information and that they could work independently of campus labs, libraries, and computer labs. It was noted by the researchers that students changed from passive learners to truly engaged learners (Al-Fahad, 2009).

The m-learning movement has seen a slower integration in the United States, but the interest may be growing. In fall 2008 Abilene Christian University (ACU) began its Mobile Learning Initiative, and thus became the first American higher education institution to apply a wide scale program. According to the University's web page *ACU Connected*, the university gave free iPhones and iPod Touches to all incoming first-year students to "explore how these technologies can be used to help people learn in new ways." ACU found that many academic

activities can be transitioned into mobile platforms successfully. ACU faculty report that mobile devices can be used to increase student communication and engagement, and that 14% of faculty report having students use their mobile device in every class meeting (ACU, 2010).

iPads in Higher Education

During the 2010-2011 academic year, higher education has shown an emerging interest in mobile, WiFi tablet technology in general, and specifically the iPad, within the broader context of mobile learning and student engagement. Overall more college students, teachers, administrators and employees bring and continue to bring mobile technologies on to campus, and this trend is expected to grow over the next decade (McRea, 2010). A confirmed interest will spur a “continued migration toward tablets and other mobile computers beyond just the iPad” (McRea, 2010, p. 2). Educators around the world believe that the technology will transform teaching and learning and help prepare students for a networked economy and the global competition thus advancing strong support for WiFi, mobile technology (Meyer, 2011). Though much of this interest is articulated in broader view of technology, the iPad was adopted and piloted immediately and with significant frequency in higher education therefore positioning the iPad as phenomenon worthy of examination. Research indicates students overwhelmingly stated that they thought such devices would improve significant aspects of their education (Kiley, 2011).

Despite the sense of overwhelming optimism generated in higher education circles about tablet technology, there are detractors. Some point to the

fact that the benefits have been articulated from students' perspectives that focus too much on convenience and the "cool factor" rather than on measured benefits for teaching and learning (Fischman, 2011). For instance, many colleges found the iPad to be more effective for educational reading and multimedia consumption, but disadvantageous for the production of typical academic work and particularly weak for file management (Kolowich, 2010). Of course there are professors who have concerns about welcoming another classroom distraction that may divert students from paying full attention to the professor, although studies show that tablets use in traditional classrooms pose a smaller attention barrier to learning than do laptop computers (Wieder, 2011).

iPad Pilot Studies

In spite of the arguments for and against introducing more technology in the college classroom, numerous iPad pilot programs were deployed in the 2010-2011 academic year. Several pilots examined how the iPad and eTextbooks affect college costs and support student learning. The iPad proved to be more flexible and functional than other eReaders such as the Amazon Kindle and Barnes and Noble's Nook. Buena Vista University found the iPad to be a more dynamic information delivery system (Schaffhauser, 2011). Ferenstein's (2011) research at Reed College found that the iPad was more efficient and offered quicker response times that kept pace with students' multifaceted information consumption. However, Ferenstein (2011) also reported that the iPad is flawed because it lacks an efficient file system that allows students to manage a larger number of PDF files and that work arounds were unnecessarily difficult

(Ferenstein, 2011). Abilene Christian University and the University of Michigan-Flint students reported that reading on the iPad was more convenient, but also reported frustration as students could not highlight nor annotate their texts (Mostafavi, 2011; Schaffhauser, 2011). Arizona State University's (ASU) W.P. Carey School of Business positioned itself as one of the first MBA programs to utilize the iPad. The study sought to make class material and literature "more portable" for students who had busy work lives and travel schedules. While interesting data emerged, the study concluded that the iPad was "not there yet." Freeman's (2011) study at ASU also found the iPad to be a great supplement but was not a lap top replacement. Also, students found they needed a WiFi connection to download class content and there were concerns that access to eBooks might expire eventually (Freeman, 2011).

Several small-scale iPad pilot programs sought to discover how the iPad enabled anytime, anywhere learning. Duke University's Global Health Institute found that the iPad increased medical students' productivity and efficiency by allowing them to engage and analyze data on site as data is most meaningful when examined in context (Schaffhauser, 2011). Stanford University School of Medicine distributed 100 iPads to its fall 2010 incoming class so that medical students would enjoy a more "comfortable and portable" learning experience (Park, 2010). An iPad study released by Oklahoma State University (OSU News and Communication, 2011) found that the iPad enhanced the learning experience and could reduce costs to both students and the institution with maximum integration. However, their data showed mixed results related to electronic

reading. While students suggested they would like to read on the iPad and that they were interested in eTextbooks, many did not actually use the iPad for reading throughout the semester.

Participatory Action Research

Participatory action research (PAR) draws from diverse academic disciplines and has been utilized in many different professional fields (Brydon-Miller, Greenwood & Maguire, 2003). In general PAR is a collaborative research process between the researcher and individuals of the community of interest with the shared intention of moving the community toward a more democratic production of social change (Brydon-Miller, et al., 2003).

As defined in education, action research is a methodology used to improve decisions and practices related to education activities (Corey, 1954). Essentially, action research is undertaken in order to change and improve educational practices in a local setting. Educators, professors, and administrators, rather than researchers from outside the community, initiate an action or intervention, then study the outcomes so that they may learn from and improve what they do (Corey, 1954). An action research study begins with a planned change to the teaching or learning context; the change is enacted and the results documented and reflected on by the action researcher and by the other participants with the goal of modest, systemic improvement (Gafney, 2008). Research participants are considered the key to the generation of valid knowledge and data, which is vital to the well being of the particular affected community (Brydon-Miller, et al., 2003). The goal is not to produce widely generalizable results, but to form locally grounded and

contextually relevant judgments about small scale improvement projects or to recommend a change in local practice (Corey, 1954).

The University of Tennessee Center for Literacy Studies developed a series of steps to guide the action research process (Ziegler, 2001):

- Identify a topic
- Recruit participants and practitioner-researchers
- Review the action research process. Ask participants to provide insight to the process
- Select a problem/Ask the question
- Collect and analyze information
- Plan activities that address the problem
- Take action/Observe the results
- Share results and recommendations

Chapter Summary

In summary, the community college has a fundamental and significant role in educating and serving its community. Typical community college students face circumstances that challenge their ability to successfully engage with their academic obligations. New technologies may provide a way to expand the boundaries of the classroom and offer new ways to interact with professors and classmates—to increase academic engagement in spite of other time constraints on community college students' lives. The proliferation of mobile web accessible technologies like the smart phone along with the introduction of the iPad tablet may provide a means to increase academic engagement opportunities for

community college students. Lastly, participatory action research shows value in making effective, systematic adjustments to one's learning activities for more immediate, small scope improvements.

Chapter 3 Research Design

Context

The Maricopa County Community College District (MCCCD) consists of ten colleges and two skill centers in the metro-Phoenix area. MCCCD is considered to be one of the largest higher education providers in the nation; 141,470 students enrolled in fall 2010. According to the MCCCD Office of Institutional Effectiveness (2011), enrollment figures over the previous decade show rather steady growth for the district. In fall 2001, 109,770 students were enrolled in the district. Starting at a peak of 123,865 students in fall 2005, enrollment decreased to 118,665 by 2007. By fall 2010, enrollment was at a decade high of 141,705. There was a three year period of decline however. So, in fact, MCCCD experienced rather significant growth over the last three years.

Disaggregating total enrollment by ethnicity, MCCCD shows a decline in total percentage of White, non-Hispanic students, while the Hispanic enrollment percentage increased. Between fall 2001 and fall 2010, White, non-Hispanic student enrollment numbers moved from 67,173 to 77,759, though total percentage showed a decline from 61.2% to 54.9%. For the same time Hispanic total enrollment increased from 18,612 to 29,865, a four percentage point gain (17.0% to 21.1%). African-American student enrollment showed a steady gain, increasing from 4,563 (4.2%) to 11,149 (7.9%). Asian/Pacific Islanders increased slightly: 4,146 (3.8%) to 6,400 (4.5%). The system's American Indian student population also showed growth: from 2,897 (2.6%) in 2001 to 4,081 (2.9%) in 2010.

Scottsdale Community College

Scottsdale Community College (SCC), part of the MCCCDC system and located on the Salt River Pima-Maricopa Indian Community, serves the metro-Phoenix's east valley enrolling 11,257 students in fall 2010. SCC experienced inconsistent enrollment growth between 2001 and 2010, but has grown steadily since 2008. In fall 2008, 10,077 total students enrolled representing a decade low. But, by fall 2010 enrollment grew to 11,257. Disaggregating enrollment by ethnicity, SCC figures closely parallel the ten-year, district trend. White, non-Hispanic enrollment shrank both in total enrollment and percentage, decreasing from 8,416 (74.3%) to 7,682 (68.2%). Hispanic enrollment has grown: 973 (8.6%) to 1,283 (11.4%). African-American enrollment grew from 208 (1.8%) to 447 (4.0%). American Indian enrollment grew from 337 (3.9%) to 555 (4.9%). Though, Asian/Pacific Islander enrollment remained essentially flat: 337 (3.0%) to 386 (3.4%) (MCCCDC Office of Institutional Effectiveness, 2011).

iPad Pilot Program

On behalf of SCC's Language and Communications Division (LC Division), journalism instructor Julie Knapp applied for and was awarded a \$16,000 SCC Technical Improvement & Innovation Project (TI²P) grant. The grant was for the purchase of 38 Apple iPads, protective sleeves, and Bluetooth wireless keyboards. SCC and the LC division were interested in exploring how new, WiFi, mobile tablet technology would be compatible with SCC's technology infrastructure, how it could cut student and institutional costs, how it affected student satisfaction and preference, how it impacted curricular applications, and

enhanced student engagement. The LC Division deployed 19 iPads to a Journalism 251 class, and 19 iPads to an English 101/102 Honors class taught by me. Because grant approval and funding did not come until the end of the spring 2010 semester, because the iPads were not delivered until July 2010, and because this was a brand new, never-before-seen technology, I certainly felt anxiety as there was a rush to prepare with only four weeks before the first day of classes.

Description of Intervention/Action

In 2010 Apple released a ground breaking, mobile tablet device called the iPad. According to Standard and Poors (2011), over 14 million iPads were sold in its first year. Many early adopters were in higher education, countering the stereotypical wait and see stance of professors toward new technology. In spring 2010, SCC approved funding for an iPad pilot program to begin in the fall. The pilot program was deployed to collect data that identified its impact on student engagement and to discover how innovation advances student success. In spring 2011, I proposed that focus groups could efficiently identify how English 102 Honors students used the iPad to engage with academic activities and information. I also proposed that by developing qualitative, semi-structure interview questions, research participants' (students') perspectives would yield data from which I would identify themes. The themes could then be used as a "language" to be used for comparison, explanation, and analysis.

ENG 101 Honors, Fall 2010

Two issues drove the approach for iPad implementation for Fall 2010, English 101 Honors: 1) ensuring that the district composition competencies were

taught, and 2) allowing students flexibility in integrating the iPad in their personal and academic lives. First my colleagues and I decided that, while the iPad was an exciting and dynamic new technology, we could not allow its deployment to detract from the skills and content I am obligated to teach. Secondly, we decided that we would not dictate what applications students must purchase and install on their iPads since one of the selling points of the pilot study was that participation would cost the students little or nothing. In fact we were interested in discovering what steps students would take as individuals to make the iPad work for them, what applications they would choose if any, and whether they would come to prefer to use the iPad over older forms of hardware (laptops, desktop in computer labs or at home).

For the fall semester, I decided to test the iPad's computing functionality in four areas: 1) how well it accessed SCC's cloud computing platform called mySCC, and its functionality with MSWord 2007; 2) how well it functioned with MCCC'D's online course management platform, the Blackboard Course Management System; 3) how well it would access electronic documents (PDF and MSWord files accessed through Blackboard and articles accessed through the library's databases); and, 4) how well it would function with the McGraw-Hill electronic text book *Connect Composition Plus*. These four areas are significant elements of my way of teaching. Functionality would be tested in four phases during the semester, and students were asked to test functionality both on campus and on one other wireless network off campus.

The students and I realized very early in fall 2010 that the iPad was not a replacement for a traditional desktop computer or laptop. Functionality proved to be inconsistent, awkward and cumbersome, and at times nonexistent. For instance, access to the campus wireless network proved difficult and inconsistent. Several iPads failed to access the classroom WiFi network at the same times as the others. This had a direct, negative effect on students' access to mySCC and to Blackboard during class. Consistently, four to six students would not be able to log on and therefore could not complete a class assignment during class time or in the same manner as their classmates who were logged on. Accessing Blackboard in class proved to be awkward as it was clear that its design was not really optimal for touch screens. Opening PDF files proved difficult as some iPads would open the document, some would be stuck in queue, and others could not gain access the first page the first page of the PDF file.

While students still enjoyed having an iPad and were enthusiastic in communicating their perspectives, there was a bit of a letdown as we all realized that the iPad was not really a tool they could fully integrate into their academic activity. They still needed a computer.

We were disappointed. However, my disappointment was exacerbated by doubts: I did not prepare nor research enough to take full advantage of this new technology, I was not creative enough, and I was too entrenched in traditional computing technology and methodology. I decided to drive the class toward meeting both ENG 101 and ENG 102 skill competencies for the fall semester,

then devote the spring semester to researching the phenomenon of mobility and the impact of the iPads.

One thing was clear, if iPads were to be fully integrated into my English course I would have to change fundamentally what and how I taught as well as change the nature of the course assignments for spring semester.

ENG 102 Honors, Spring 2011

The intervention for the spring 2011, ENG 102 Honors course, focused on testing the iPad's function as a mobile device and experimenting with innovative assignments. I sought to discover how students engaged with educational activities outside of the traditional conceptualization of the classroom through mobile engagement/learning. Also, I wanted to discover whether innovative iPad assignments supplemented and enhanced the students' engagement. Even more so, I wanted to find out if students thought that these activities were worth their time when compared with a more conventional college composition curriculum.

iPad assignments. I designed four assignments that would take advantage of the iPad's mobility, data collection functions, and its presentation capability.

- Assignment 1. Biography Video (Appendix G): The Biography Video was assigned on the first day of spring class, Tuesday, January 18, 2011. Students signed up for *Animoto* and YouTube accounts during class time. Students were also given a demonstration of how to navigate and utilize *Animoto*. The assignment was due at the next class meeting Thursday, January 20, 2011.

Students were asked to create a 30- second, biographic video using the free version of the online program *Animoto*. *Animoto.com* allows users to upload personal photographs, add transitions, insert text, and add music to create a slide show video. Students were asked to create a visual representation that presented their personal and academic selves and professional aspirations. They were asked to save the video to their *Animoto* account as well as import the video to a personal YouTube account created for the course. Each student presented his/her video on the iPad to the class.

- Assignment 2. Group Field Research (Appendix H): After some preparation and discussion on Tuesday, February 1, 2011. Students had the entire class period Thursday, February 3, 2011, to engage and complete the Group Field Research assignment.

Students were divided into four groups. Each student group was required to choose a current debatable issue and collect data using their iPads. Each group member had a different role: 1) one member would briefly interview another student (not enrolled in ENG 102 Honors); 2) one member would briefly interview someone who works for the college and record his/her opinion on the issue. Both interviewers were to ask permission to take a photograph of the interviewees with a phone camera, send it to their (the interviewers') email account, then open and save the image on their iPad to be shown for the group presentation. Students were to record the interviewee

responses using the Notes app on the iPad. The other two members of the group were to use the iPad web browser, *Safari*, to locate and summarize data and stances from a popular, nonacademic web site, and to find data and perspective from a scholarly online source. Once this was completed students would present their findings to the class using the iPads to present their unique data.

- Assignment 3. The Anti Advertisement (Appendix I): A discussion of Jib Fowles' essay "Advertising's 15 Basic Appeals" took place in class on Tuesday, February 15, 2011. Students were assigned to create the Anti Advertisement *Animoto* video on Thursday, February 17, 2011. The video was due to be presented in class on Thursday, February 28, 2011.

After completing a unit based upon the Jib Fowles' essay, "Advertising's 15 Basic Appeals," students were to use their iPad to locate a magazine ad or advertisement image online. Then they were to create a 30-second, *Animoto* video that identified two to three appeals they saw at work in the advertisement. Using a free and basic photo editing program, *Irfanview*, students could isolate specific aspects of the advertisement then type text on the image identifying the appeal. Students could save the isolated images as separate photograph (.jpg) files to be used in their video. Students were to use their iPad and YouTube account to present their Anti-Advertisement for feedback.

- Assignment 4. Research Advertisement (Appendix J): The Research Advertisement *Animoto* video was assigned on Tuesday, April 19, 2011. The video was due to be presented on Tuesday, May 3, 2011. At the end of the semester, students began to draft their research paper in parts—the first being the Three Paragraph Intro. A three paragraph intro consists of: 1) A Context Paragraph—student writers are to detail an attention-grabbing example or situation that captures the essence and pathos of their issue, 2) A Background Paragraph—the student writers are to provide important definitions, explain particular concepts, and/or detail the various perspectives that surround their chosen debatable issue question, and 3) A Thesis/Argument Paragraph—the student writers are to articulate their stance on the issue with a thesis statement, then explain their reasoning or preview their support in the rest of the paragraph.

After receiving feedback from me, students were then asked to create a 30- second *Animoto* video that provided a visual representation of the three paragraphs. They were asked to locate images on the web and attribute them using Modern Language Association (MLA) guidelines. Using the iPads students were to present their research advertisement to another professor, another classmate (not in ENG 102 Honors), and a friend or family member for feedback and responses. Students were to record those responses using the Notes app.

Data Collection Methodology

I recorded conversation during three focus group meetings to gather data on student reports of their iPad experiences and their claims about how using the iPad influenced their academic engagement.

The use of focus groups serves a theoretical and practical purpose for the dissertation study. Focus group participants are likely to collaborate in articulating their shared experiences as well as its meanings (Charmaz, 2006; Friere, 1997). However, like interviews, focus groups can be limited in that they primarily provide verbal behavior and self-reported data (Morgan, 1997). The interactive nature of the group setting is also credited with eliciting higher quality and more extensive responses. Group discussions can provide direct evidence of similarities and differences in the participants' opinions and experiences. Also, focus groups may lessen the power of the interviewer and make it easier to utilize a semi-structured question or a discussion topic script (Morgan, 1997).

Using focus groups allowed me to mitigate some of the constraints of this action research study. Since the Apple iPad is a very new technology and since classroom applications are in the very early reporting stages, there was no established language for describing the iPad experiences. Also, individual participants in this study may not have prior experience sharing their perspectives in this manner. Lastly, the selection of focus groups as the primary data collection tool was also influenced by time constraints; data collection was to take at the end of the spring 2011 semester.

Participants

Profile characteristics of potential research participants were collected through a brief questionnaire (Appendix B). The participants of the study were students enrolled in the ENG101/102 Honors iPad Pilot Program. Students who enrolled in this particular section were assigned iPads free of charge to use for as long as they remained with the cohort (ENG 102 Honors iPad Pilot, spring 2011). As an added benefit McGraw-Hill donated a free electronic textbook, *Connect Composition Plus*. In exchange for the complimentary iPads, students also consented to institutional research surveys as well as having some classroom activities videotaped for future presentations not related to this dissertation. Students were interviewed in small focus groups during the last four weeks of the spring 2011 semester.

A total of 13 students participated in this study (nine females, four males). Eight students were White, non-Hispanic (six females, two males). Three students were of Hispanic descent (two females, one male). There was one African-American male, and one Native-American female. Eleven students are traditional age for first year undergraduate students (18- to 19-years-old). One white female student is 16, and the Native American female is 30-years-old. Eleven students report English as their first language. Of the three Hispanic students only one speaks Spanish, and she reports simultaneously learning both English and Spanish as a child. Another female student reports German as her first language. The Native-American female is a single mother of three children. One of the Hispanic

females reports being married with two children and is pregnant with her third child.

Twelve students were enrolled full time. One Hispanic female was enrolled part time. Nine students report working part time; the other four do not work. One student works 10.5 hours a week; three work at least 15 hours a week. Five students report working between 20-30 hours per week. Three students report participating in co-curricular activities, and six students report participating in extra-curricular activities.

Focus Groups

Data were collected during the last three weeks of the Spring 2011 semester. Students were asked to participate in one of three focus group sessions held on May 23, May 25, and June 1, 2011 during regularly scheduled class time (Appendix E). Scheduling during class time was offered as an added convenience and to encourage full participation. However, participation was voluntary. Each focus group lasted approximately 60 minutes.

Working with several models (Auerbach & Silverstein, 2003; Charmaz, 2006; Creswell, 2009) I designed questions to elicit students' perspectives regarding how participants used a mobile device to engage with educational activities in general as well as educational activities for the English class. Also a primary research interest was discovering how students integrated the concept of mobility and adapted it to their daily and academic lives. All 13 students chose to participate, placing themselves in two groups of five and one group of three.

The focus groups were conducted in a conference room located in the faculty office building of the Language and Communications Division. At the beginning of each focus group students were read a Privacy and Opt-out Statement (Appendix C). They were told that their responses would be audio recorded analyzed and some would be quoted in reports; however, their identity would remain anonymous. Participants were asked to sign a form stating they understood the purpose of the study, how their data would be audio recorded and analyzed, as well as their rights as research participants. They were also given a second copy of the form for their records.

Informed by a pilot focus groups questions (Appendix D) tested at midterm, I developed a question script (Appendix F) that would prompt participants to more specifically detail and articulate 1) the types of general educational activities as well as activities related to the ENG 102 Honors course that involved the iPad, and 2) their perspectives on the value of those activities. Using Creswell's (2009) and Charmaz's (2006) open ended question models the questions were designed to 1) ask participants to describe activities of their choosing, then 2) in using pre-planned follow-up question ask participants to assess and evaluate the iPad activities as it related to their engagement.

Data Collection Procedures

All 13 students in the ENG 102 Honors iPad Pilot Program agreed to participate in the focus group. Five students signed up for Focus Group 1 held on Tuesday, April 26, which lasted approximately 63 minutes. Three students signed up for Focus Group 2 held on Thursday, April 28, lasting approximately 68

minutes, and five students signed up for Focus Group 3 held on Thursday, May 5, lasting approximately 65 minutes.

Since this dissertation study is about the use of mobile devices, I decided that mobile technology should also be used as the primary data collection technology. Both an SCC iPad and my own personal iPhone 3G were used to record research participants' responses during the focus groups. Mobile technology has caused a very noticeable change in that there is a merging of both the personal and professional data as well as personal and academic data and files within the devices, storage, and access. This was also true with my data collection.

iPhone 3G. I used my personal Apple iPhone 3G with 32 gigabyte storage capacity as one of two data collection technologies. After testing for quality and reliability in the pilot study, the iPhone's standard Voice Memo application (app) proved sufficient for basic voice recording. First it must be noted that before collecting audio data the researcher must first set the iPhone to Airplane Mode. The Airplane Mode prevents the iPhone from receiving data such as incoming calls and text messages, "push" notifications, and temporarily pauses wireless internet service. The Voice Memo app will stop recording for incoming calls and text messages and push notifications from users of social media apps. Obviously ring tones and text message alert signals will interrupt the session and disrupt the natural flow of the interviews and focus groups.

The Voice Memo has a very simple start/stop function button and uses the phone's voice receiver for recording. The record function is limited only by the

iPhone's total and/or available, internal storage capacity—in my case 32 total gigabytes. I was able to record and store on my iPhone recordings of each of the three focus group sessions, each lasting slightly over one hour (Focus Group 1: 1h 3m 31s, Focus Group 2: 1h 8m 40s, Focus Group 3: 1h 7m 53s). The recordings are automatically timed stamped and dated. The user has the option of trimming the recording and, more importantly, custom labeling the data recording for easy indexing of the corpus. Depending upon the user's iTunes settings the Voice Memo data can be automatically synchronized (synced) with and backed up into his/her iTunes account. After the data is synced the Voice Memo recording will remain on the user's device until he/she removes it. However, backing up the Voice Memo's data files is limited in that the user cannot download the audio files to a PC computer hard drive nor to USB storage devices. Voice Memo data was not synced with Apple's or other provider's cloud computing storage services (e.g., DropBox) during this study.

During the focus group sessions, participants sat at a long conference table. For each session, participants chose to populate one end of the table. One student sat at the end and other students sat on both sides forming a rough semi-circle. The iPhone was placed in the front-center of the participants. The volume of the recording proved to be somewhat low. This may be due in part to the volume of the participants' voices, but also due to the limitations of the recording device. Participants on the periphery of the iPhone's placement recorded at the lowest volume.

Using the iPhone as a recording device minimized distraction for the students since a few participants also placed their keys and mobile phones on the table. (They were asked to turn their phones off for the duration of the focus group session.) It was observed that the participants saw my iPhone as just another phone on the table.

iPad. The WiFi 32 gigabyte iPad used for this study did not have a preloaded audio recording application. Several audio recording apps are available free or for purchase from the Apple App store. After some research of reviews, I opted to purchase the Sound Note app for \$4.99. The Sound Note app provides some beneficial functions for the researcher. Audio data capacity is only limited by the storage capacity of the iPad itself. The iPad is available in 16, 32, and 64 gigabyte versions. While Sound Note records the audio, the researcher is able to type notes using the iPad's touch keyboard or by using a wireless Bluetooth keyboard. With a quick tap the researcher also has the ability to draw sketches with a finger tip or stylus pen. A very efficient Sound Note function is that it syncs the researchers' notes with the recording. The researcher can tap a word or phrase in his/her notes, and Sound Note will go to the exact time in the recording at which the note was typed. This allows the researcher to more efficiently locate a specific place in the audio record by using the note function for time and marker references.

Sound Note data is stored on the iPad and will automatically time and date stamp the file. The researcher also can custom label recording for better organization and identification. However, Sound Note files do not automatically

sync with iTunes. Instead the audio and text data are stored online.

Users/researchers are prompted to go to a unique web address that will allow the user/researcher to download an MP4 audio file to the hard drive of a computer.

The researcher can also download his/her notes as either a .txt file or a PDF file.

As a back up the user can then import the MP4 file to iTunes using the Add File to Library function, or the user can copy or move the file to a back up storage device of his/her choosing. However, in moving the data files off the iPad the user loses the ability to use the notes as a time marker for the audio recording.

The iPad's built in microphone is at the top of the device directly to the right of the headphone jack. It is rather small and proves to be limited in its ability to record sound at a distance. Again this may be due in part to the participants' low volume of speech. I sat to the right of each semi-circle of research participants, approximately six feet away from the farthest participant and approximately two feet from the nearest participant.

Chapter 4 Analysis and Results

Using Creswell's (2009) and Charmaz's (2006) models, I developed qualitative, semi-structured interview questions (Appendix E) to be utilized in small focus groups. After listening and analyzing research participants' recorded data, I began to identify themes that described participants' iPad use in their education as well as the value they assigned to iPad activities.

Theme Identification

Theme identification is a primary goal of the analysis of qualitative data collected from interviews. In order to analyze the data recorded during the focus groups I selected two word-based analysis methodologies: word repetition and key-words-in-context (KWIC). Both techniques draw upon the strength of a simple principle: as Ryan and Bernard (2003) state, "If you want to understand what people are talking about, look at the words they use" (p.2).

The repetition technique focuses my observations and analysis on terms or concepts that occur over and over again in the participants' narratives and responses. Words and concepts that occur repeatedly can indicate that they are important and significant in describing the perspective of the participants. Repetitions and associative links are considered to be the simplest and most direct indication of an organized thought or pattern or a mental structure that represents an aspect of the phenomenon (D'Andrade, 1991; Ryan & Bernard, 2003). In this analysis, word repetition identification was guided by the research questions and the notion of student engagement. I sought to identify repeated words as indicators of themes and concepts that formed the categories of activities the participants described.

I also sought to analyze how they assessed those activities. I chose to employ the KWIC technique to identify and analyze research participants' assigned value of the iPad activities. As word repetition was used to identify significant concepts and categories of significant activities, a researcher can use KWIC to systematically examine and describe the context from which the concept emerged; by doing so I am able to identify associative meaning and value (Ryan & Bernard, 2003). KWIC is based in simple observation and allows for analysis to occur during the process: "If you want to understand a concept, then look at how it is used" (Ryan & Bernard 2003, p. 3).

The research questions were the primary reference point used to identify relevant themes that described research participants' claims about the influence of using the iPad on their educational engagement. To reiterate, the purposes for this dissertation study were to:

- Describe educational activities that involved the use of the iPad in one English honors course section at Scottsdale Community College;
- Describe student's self reports of how the iPad affected their academic engagement;
- Determine how or whether the iPad made a difference in participants' learning and engagement, according to their self-reports;
- Identify what might be done to make the iPad more useful as a learning tool in future offerings of an English honors course at Scottsdale Community College.

Data Analysis Procedures

Drawing on the experience of pilot focus group interviews conducted earlier in the semester I was able to begin an informal, real-time analysis during and immediately after the first focus group meeting. During the second and third focus groups, I used the Sound Note app to mark utterances in the data recording that were similar utterances noted in previous focus group recordings. This was my attempt to begin to make sense of the raw data by noting repetition as a way to identify emergent themes. Research participants' initials were used to indicate who was speaking, and the repeated theme or idea was noted and numbered.

After the three focus groups were complete I reviewed the Sound Note text that I created in order to list any theme that was repeated three or more times. To verify the accuracy of my denotation, I was able to tap the appropriate notation into the audio file as I once again listened to the digital audio recording of each focus group session. During this coding process, I added a second layer of notation to the digital audio files that either used a symbol (usually an asterisk or check mark) or a brief phrase to indicate potentially valuable data points or a potentially usable direct quote.

At this stage I began to develop first draft, hand written outlines that would guide my further analysis. The outlining process went through several iterations before finally identifying what would be most appropriate to present. Lastly, I listened to the focus group recordings a third time to verify that the identified data points supported and illustrated the themes and claims I would

present in my developing list of results and answers to my guiding research questions.

General Observations

First, there was unanimous agreement that all 13 participants enjoyed having access to the iPad for the duration of the course. They reported that the iPad was both academically and personally useful. Seven participants directly stated that they intended to purchase an iPad at the conclusion of the pilot, although the expense of the iPad and its accessories was an issue for all. One participant in particular, who self-identified as a “total non-technology person” at the beginning of the course described his conversion experience at the end of the semester: “I was so used to using the iPad to check my syllabus and my work schedule, and to read assignment prompts [that] I got the iPhone 4 when it was time to replace my phone... [At first] I thought they were toys, but I rely on it now.” Five participants inquired about purchasing their assigned iPads at the conclusion of the semester. Another four participants stated their intention to upgrade to a smart phone when the time came to replace their current mobile phones.

Also, in spite of the nuanced and at times seemingly conflicting evaluations, a majority (10 of 13) of the participants agreed that having the iPad to use for the semester did in fact enhance their experience in the ENG 102 Honors course. Many agreed that the iPad pilot program was a valuable line of research and worth exploring. Two of the participants stated that they were indifferent on this question, and one thought that, at times, the iPad assignments

hindered the “actual reason for taking the class: to learn how to write college composition.” However, all participants felt “privileged,” excited,” or thought it “was so cool” to have had the opportunity to participate in the iPad Pilot Program and to contribute to the research, to contribute to “something so new.” This attitude permeated much of their approach to the iPad assignments. Not only did access to the iPad increase their expressed interest in the class, the iPad also triggered questions by family and friends about the course and even about the college: “One of my brothers said that he would sign up for the class even though he hated writing,” and (from another participant), “My daughter said she couldn’t wait to get to college to do cool things like this.”

Educational Activities

Several educational activities were mentioned during the focus groups that helped to define how students engaged in their educational activities in general and specifically in the ENG 102 Honors course (Table 1). In identifying these activities the participants were also identifying how they engaged educational activities with the iPad.

Table 1 displays the significant themes that participants articulated during the focus group sessions as well as the number of times the theme or related terms were mentioned. Three distinct themes rose to the top as most frequently raised. When identifying emergent themes, besides counting direct and explicit references, I also found it beneficial to count related themes. For instance, in identifying the Notes themes, I counted every time the Notes app was mentioned, but also counted the number of times participants referred to the act of taking

notes (e.g., “taking notes,” “typing my notes,” “for note taking,” etc.) using their iPad. Broadly, the same was true for the “Web Browsing” theme. Participants described “accessing the Internet” through various terms (e.g., “googling,” “got on google,” “[web] surfing,” “[internet] browsing,” “[internet] searches,” “looked it up online,” etc.)

Table 1

Frequency of Themes Related to Student Engagement Activities

<i>Theme</i>	FG1	FG2	FG3	<i>Total</i>
Notes	13	12	8	33
Web Access	11	10	6	27
Email	9	5	4	18
Reading	4	3	3	10
Presentation	3	3	3	9
Typing/Drafting	4	3	2	9
Studying	3	2	3	8

Note: *FG = Focus Group*

Notes app. Without exception, all of the participants initially and immediately identified the iPad’s Notes app as having significant educational value. The Notes app is preloaded and standard on all iPads and iPhones. Although other note taking applications are available (for purchase or free) from the Apple Apps store, except for one, none of the students downloaded another

note taking app. It seemed unnecessary since the standard Notes app proved more than sufficient for the participants' use.

Initially, however, many participants stated that they had to remind themselves to take notes on the iPad rather than using a paper notebook and pen. During the ENG 102 Honors course, I had to remind them, at times admonish them, to use their iPads to take class notes. Choosing to handwrite their notes seemed to be more of a habit than a preference. Several participants made similar comments such as: "I was just used to taking notes in my notebook, so it was the first thing you reach for in class."

However, other instructors' classroom policy also influenced some participants' note taking method. One stated: "I was not allowed to use laptops, smart phones, or iPads in a few of my other classes. So I just used my notebook so all of my notes were in the same place." However, after the first several weeks of the semester and after this student explained her participation in the iPad pilot, some of her other instructors "relaxed their rules a little bit" and she felt more comfortable taking "all of her notes on the iPad."

According to participants' remarks during focus group interviews, iPad Notes had two primary advantages over traditional notebooks and even over smart phones and laptops: 1) speed, and 2) ease of access. Almost unanimously, participants spoke of the immediacy and convenience of iPad Notes. One participant stated that "opening the iPad and pressing the home button, then [touching] the Note app on the touch screen was faster than opening my notebook and trying to find the last page I left off at." Another student nodded her head in

agreement then added that she “was pretty happy that I could take better notes, because I can type faster than I can hand write. And, also some of my teachers, especially you, like to talk while we are copying down the bullets from the PowerPoint slides. Once I got used to using the iPad I was able to keep up better.”

In the second focus group session one student stated that being able to take faster, better notes directly affected his studying and performance on tests.

I could take more notes, faster, and be able to read them later. My handwriting is bad anyways, and when I am rushing it gets real sloppy, then later I can't really tell what I wrote. Typing notes is way neater, and I can study better because of it, and I'm sure I get more answers right on quizzes and tests.

Research participants also spoke of an increased and an improved access to their notes. Several commented that using tap-and-flick scrolling was a lot more efficient way to find particular notes and to locate notes taken in other classes. What was particularly beneficial was Note's search function that allows the user to locate specific notes through a word search. “Just type in the word or concept you're looking for and it pulls up any of the notes that have that word in it.” Because of this functionality some participants were more aware of using effective headers and titles to better identify notes so that they could be efficiently located at another time. “Sometimes I would type ‘Important Unit 2 Quiz; or type ‘quiz vocab’ so I can find them better.”

Easier access, search and retrieval of notes were a benefit both for the individual student and also for their classmates. Almost all of the students in the ENG 102 Honors course had the email addresses of at least one or two of their classmates. If absent or late for a class meeting, the participants would rely on a classmate to email notes to him/her.

You could just do it right there as long as you were in a wireless spot.

You don't have to worry about tracking down your friend, Xeroxing them, then trying to read it later. You just get them and you don't have to worry about it. You just send them [to one another] before you leave class.

The benefits of iPad Notes was certainly tempered by students' sometimes frustrating experiences with the touch screen keyboard. Some students did not mind the touch screen key board. "I got pretty good, especially after I got used to toggling to get to the numbers and symbols." Another student remarked that he could "now type with one hand." However, other students said that they did not like using the touch screen key-pad.

I did not like the touch screen typing. I need to feel the button on my finger tips to know where I'm at. I feel like I'm just punching a space.

Then when the iPad auto corrects and I look up, it's not at all what I thought I typed.

Three weeks into the spring 2011 semester, participating students were issued Apple Bluetooth wireless keyboards, and there was broad agreement that it helped their typing accuracy and speed. The wireless keyboard is thin and light enough to maintain mobility. But, some bemoaned the fact that they now had to

carry two devices, and if purchasing one for him/herself the total price of the iPad plus the keyboard would be “very close to a regular laptop.” Still others commented that there were “special [carrying] cases” that could accommodate the iPad and a wireless keyboard, and that the full package was still lighter, thinner, and “easier to work with” than carrying a “bulky” and “fragile” laptop in their backpack.

Certainly notes can be taken on a student’s personal laptop, but almost all of the ENG 102 Honors students who had a laptop at home remarked that they would not or did not like bringing their laptop to school unless they had to. Also, the Notes app is a free pre-loaded app for the iPhone and iPod. Many students stated they preferred not to take notes on their smart phone because the screen was too small and the phone’s key-board was not as convenient nor as efficient as the iPad keyboard. Lastly, many of their other instructors were uneasy with students tapping away on their phones. “We could be taking notes, or we could be texting or playing Angry Birds. With the iPad our teacher could see what was going on on our screen.”

Immediate web browsing. The advantages of being able to quickly Google or to quickly access the Internet was mentioned with similar frequency as the Notes App. The benefits that participants found in being able to access a web browser in class were 1) Speed, and 2) Ease of Access. Whether it was an individual search, part of an in-class assignment, or at the direction of the professor, participants valued having access to the Internet in a convenient and generally readable package.

Whether you had your iPad on or not, all it takes is for you to press one or two buttons and you're on the web. It really just depends on how fast the wireless [network] is working that day. Even if you have a laptop in 'sleep mode' the iPad [is much faster, since it] has no boot-up time.

The fact that students can access the Internet during class is worrisome for some faculty because it poses a potentially serious distraction to student learning. However, participants found value having that functionality. "Sometimes one of my teachers would mention something in their lecture like a related event in history, or a movie, or person, and if I didn't know who or what it was I could look it up real quick." When asked whether doing so was a distraction to the lecture of the course content, the student shrugged her shoulders and answered:

Kind of... I don't really think so. I'm still listening out of one ear, and I'm not really surfing. It's just to get the reference. I think it's more distracting to hear my teacher mention something that we are all supposed to know or relate to, but I don't really. It helps me sort of catch-up, and I can do it quickly without someone noticing.

The benefit of having quick and easy access to the Internet during class was not exclusively for students: some of their instructors benefited as well. Several participants described times during their classes when their instructor asked him/her to conduct a Google search, access a certain web page, or even access a YouTube video. Usually these requests were done on the spur of the moment as the instructor needed a detail clarified or suddenly recalled supplementary material that could be accessed online. While the request for

students to use their technology was not exclusive to the iPad pilot participants, “My teacher would specifically say to me: ‘Could you use your iPad to look up this, or look up that.’ But, that was when some of my other classmates didn’t have their laptops on. Or, because the class computer wasn’t turned on, or he was already using it for PowerPoint....”

Certainly the iPad allows for quick and easy access to the Internet anytime, anywhere. But this capability is limited by some functionality and compatibility issues. Students said that they were pleased with the iPad’s general consistency in accessing a wireless network, but sometimes “It just wouldn’t get on the web.” This was amplified by other participants’ observations. “If there were a couple of different wireless devices [active] in the class, the iPad was the last to get on, if it got on at all.” This was particularly the case in the ENG 102 Honors class: “Anytime you asked us to do some sort of in-class assignment that involved the Internet, consistently four to six of the iPads would just stall in the queue. But, it was always a different four or six iPads.” Whether or not the issue with internet connectivity is due to the iPad or the capacity of the campus wireless network or both is a question that remains unanswered; the fact of the matter is that this functionality issue negatively affected student engagement.

While participants were pleased to have quick and easy internet access for more informal searches, the difference between point-and-click web pages and mobile friendly apps was a problem. The iPad’s functionality proved awkward and cumbersome for accessing and for navigating traditional, point-and-click web sites. Negative effects to student engagement were apparent in three specific

applications: 1) mySCC, 2) the Blackboard Course Management System, and 3) online, electronic research databases (*Academic Search Premiere, Academic OneFile, National Newspapers*). Participants' comments regarding these three applications indicated negative effects on both their institutional engagement as well as on their engagement with the ENG 102 Honors course.

The portal called mySCC is a cloud computing platform that is a major part of Scottsdale Community College's network and web infrastructure. Students are given network space to store and access their files and documents both on and off campus using their campus network log in information, their Maricopa Enterprise Identification (MEID). Also, mySCC offers students on- and off-campus access to over 220 applications. As its slogan declares: "Any Time, Place, Device." So in theory, students should have been able to utilize the Microsoft Office Suite (MSOffice) which includes important business and education programs such as Word, PowerPoint, and Excel.

SCC has secured a licensing agreement with Microsoft that allows students this level of access. The agreement and free access from off campus has very positive effects on student engagement as they can now use the professional, business standard, word processing program without having to be located on campus and students do not have to purchase the MSOffice suite as an out-of-pocket expense. If MSOffice could be accessed and utilized with the iPad, this would be a positive expansion of mySCC's impact on student engagement as students could now type papers with any device, at anytime, anyplace.

However, participants indicated that access to mySCC was inconsistent on campus especially if all 13 iPads were attempting to access the network at the same time in the same class room. When they were able to access MSWord through mySCC navigation, functionality, and efficiency were unreliable. “When Word would open it would look like it does on a PC, but much smaller. It wasn’t that hard to type, but when you needed to use some of the editing functions or to scroll down, it was more difficult.” Another participant interrupted and added, “The program was designed for a ‘mouse,’ not to be ‘fat-fingered.’ Half the time you press the wrong button, or tapping the screen won’t open [it] up. Sometimes it wouldn’t let you scroll down the document.” In another focus group, one research participant complained, “Even if you could finish a paper on the iPad I wouldn’t trust it to save the file back into mySCC.” Another remarked,

Trying to type an MLA paper on the iPad through mySCC just makes the process longer and more tedious. You can’t print from it. You’d have to save it somehow. (I took screen shots of my paper and saved them to my photos.) Then go to your computer, open everything, then print... I should’ve started on the computer in the first place.

Many students indicated that after attempting to access mySCC without success early in the semester, they simply quit trying.

Frustration with attempts to use two other major applications: 1) Blackboard, and 2) online research databases was also reported by several participants. Accessing Blackboard with the iPad proved to be cumbersome. “The ENG 102 Blackboard was okay because you used buttons to access certain

sections, but some of my other teachers just used links, so I was always pressing the wrong thing, going to the wrong section and wasting time.” Also, “Documents took a long time to open. Word docs were okay, but PDFs took forever.” Another student bemoaned,

When we were taking a quiz in Blackboard everything opened fine, and you could type just great in the text box, but the iPad wouldn’t let me scroll down no matter what I did. I had my answer all typed and ready, but I couldn’t get to the ‘submit’ button.

Using the iPad to access the electronic, research databases also proved to have a negative impact on student engagement. “The search engine seemed to take longer, and it’s hard to scroll down the list of results when you are trying to tap this small arrow. You can enlarge a section of the database on your iPad, but it was an extra step, and I didn’t like to view the screen in that way.” Another added, “*CQ Researcher* reports were a pain to scroll through. HTML docs were okay, but articles in PDF format wouldn’t always open or you couldn’t access all of the pages.” Again, several research participants stated that after unsuccessfully attempting to access the research databases from their iPad a couple of times, they opted to conduct most of their research on campus or by using a personal computer.

Email communication. Twelve out of the 13 research participants stated that they had access to at least one personal computer or laptop at home. And, 10 out of the 13 stated they had a smart phone or a mobile phone with email capability. Overall, research participants valued the email function of the iPad

because of 1) ease of access, 2) large display size, and 3) convenience. When on or off campus, participants preferred to email with their iPad rather than their phone. When at home emailing was completed according to which device was more convenient or which device they happened to be using at the moment.

Many participants identified easier access and convenience as a primary benefit to student engagement. “If I needed to email class info to a classmate, or email you with a question, I could type it up right then and there.” Another participant added:

I liked that I could type and send an email as the question or issue came to me. Sometimes the question wasn’t relevant to the class discussion or more of an individual thing, or I had to leave quickly after class.... And, if I waited until I got home or found a computer, I probably would have forgotten or the moment would have passed.

Another participant remarked that being able to email from the iPad benefitted members in a small group for another class.

When our group was planning what material we were going to present, I was able to look up an article that another girl mentioned, and we were able to view it right there... When we all agreed that this is what we would cover I was able to get everyone’s email address and send it to all of them, so they had a copy of the file by the time they got home to their computer. They didn’t have wait for me to get around to sending it by the end of the day or something. It was great because I just reached into my

purse, turned on the iPad, and searched for it. I didn't have to wait like I would if it was my laptop. I never bring my laptop to campus anyway.

Effects on Engagement

Research participants produced several narratives regarding the iPad's impact on their academic engagement. While one can begin to make inferences about how student engagement was affected from the above data, the following data represent the uniquely personal and individual themes that were articulated in the focus groups. The framing of positive and negative impacts were drawn from using the KWIC method of theme identification—going back to the recording and observing the surrounding context from which the particular data and/or theme emerged.

Impact at home. One participant told her focus group about how her iPad access actually brought her family closer together. The family owns a laptop and has a wireless home network. But, while the laptop can be portable and “mobile inside our house” the family generally feels it is too big and bulky: “Ninety per cent of the time it stays on the desk...” This meant that whenever she or her two daughters needed to do homework on the stationary laptop, it was an act that separated and isolated the person from the rest of the family. “I mean we are all in the same room, but whoever is on the computer is so focused on that screen... I know sometimes my daughters won't hear me call their name unless I get in the way of the screen.”

Because of the convenient size and mobility of the iPad, doing homework, conducting research or just browsing the web is not an act of separation or isolation.

It's nice because we can all be on the couch together. I can watch T.V. while my daughter next to me is looking up a something on the web for an assignment. When I have to type a homework assignment I'll use the Notes [app] to type it on the couch then email it to myself; and when they are in bed or gone, then I'll go to my laptop to copy and paste it into Word... Sometimes we sit there and trade it [the iPad] back and forth... it's definitely brought us together more.

However, she and her daughters also were aware of the distinction between doing informal educational tasks and the demands of more formal education tasks.

Yes, when I have to type those major essays, I do need to be isolated and separated; and I will go to the laptop, and my daughters knew not to bother me at that point.... It was also nice to have the iPad so they could do their homework or get on the web while I was typing one of your papers.

Anytime, anyplace, spontaneity impact. Another participant was conflicted about the advantages and disadvantages of engaging with her educational activities “anytime, anyplace.”

I teach dance, a couple of classes a day, three times a week. There can be a lot of down time between classes. So, it was nice to be able to pull out

the iPad and work on homework or read. I really liked being able to write and draft when the thoughts came to me, like in bed or in between classes.

But, for this research participant “anytime, anyplace” also had a down side to her educational engagement.

I couldn’t really work with the iPad outside because the screen wouldn’t really show up. Plus, if I was outside, or at the mall, or Starbucks, it was too easy to get distracted and start to people watch. Sometimes if I knew I had to really put time into writing, I knew I had to go to my [home] computer and shut the door.

Relevance for English honors? One participant reported that he did not experience beneficial impact on his engagement. “Other than being able to type my notes in class and being able to make visual presentations from your hand, there wasn’t much else that I couldn’t do on a computer.” This research participant really viewed the iPad as a new gadget that did not offer improvement to his educational experience:

It’s a toy. I picture businessmen or my mom reading on their iPad at some resort pool or on a plane... Most of the assignments and presentations you had us do, I just did on my computer then just used the iPad to make the presentation in class or to someone else like you asked us to. But, if you can’t type a Word document or save your research articles there’s really no reason to use it for English class. I mean reading on it was alright, the eTextbook was cool, but I still have regular books for all my other classes.

I'm just used to reading a book.... I never really used the iPad unless it was for English class.

When asked how they thought the ENG 102 iPad assignments affected their motivation in the class and their learning of the content, several students remarked that while the assignments were “different and interesting and even fun” they were unsure of the iPad’s relevance to regular college composition content. They were more uncertain about whether the iPad was really needed to conduct and complete the assignments. One participant remarked,

I mean we had to try new things out—that was part of this ‘experiment,’ right? We all knew that going in... It was cool to try new presentation programs like *Animoto* and *Prezi*. It was cool to just be able to click on your iPad and show people your work. But, I’m not sure if I would use these programs after this class—maybe *Prezi* instead of PowerPoint, just to do something different. But, you didn’t need to have the iPad to create the presentations.

Another participant added, “The iPad is great for showing presentations one-on-one or to small groups, but not for class presentations. Not everyone will be able to see the screen in class and the speaker isn’t that strong.” Yet another participant saw value in the assignments but did not feel that the skills would be useful after the class:

I saw the connection between you having us analyze the appeals and implicit arguments in advertisements, and creating an advertisement for our Researched and Cited Argument paper, because we got to use the

same appeals to ‘sell’ our social issue argument. But, I just don’t see us ever being asked to do that again, unless we take some video or design class.... If I did take another English class, I’m pretty sure we wouldn’t do any of that stuff.

Bridge over the digital divide? Much of the more nuanced criticism of iPad use in our English honors class came from research participants who owned or had access to a desk top or laptop computer and who were comfortable with traditional academic computing. One research participant who did not own a computer at home stated that having an iPad benefitted her greatly. “The iPad was great because I don’t have a computer at home so I was able to type my papers at home, in my bedroom or somewhere else, on my own time.”

Even though this student still had to take extra steps to get her papers into the proper printable format she did not view it as a negative.

I would draft most of my papers on the Notes app then email them to myself. Then, I would give myself a day or two to get to a computer lab, and I would copy and paste my draft into a Word file, format it, double-space, then add to it to get to the page count.

For this participant taking the extra steps and planning ahead for formatting was not a significant inconvenience. “I’m just glad I didn’t have to spend hours in a computer lab, or have to plan my time before the lab closed. It was easier for me to type it on Notes, on my couch or in my room, than to drive to campus and not be home.” When asked if she considered purchasing Apple’s word processing app Pages for her iPad, she answered, “I didn’t want to buy any

apps for this class. The iPad and the *Connect Composition* [textbook] were free, so I decided not to buy anything from the app store. Plus, I like working with Word....”

Suggested Improvements

Focus group participants were very clear about what improvements were needed to maximize fuller iPad integration into their education and for a college English composition course. Table 2 displays the three themes related to improvement needed for the English Honors course that were mentioned most frequently during the focus group conversations.

Table 2

Frequency of Themes Related to Suggested Improvements

<i>Theme</i>	FG1	FG2	FG3	<i>Total</i>
Stronger WiFi	7	5	4	16
Mobile Friendly Interface	6	5	3	14
MSWord	4	4	3	11
3G vs. WiFi	6	2	-	8
USB Port	3	2	-	5

Note: *FG = Focus Group*

Better campus WiFi access. Participants indicated that weak and inconsistent access to the WiFi network on campus and especially in class negatively affected their engagement. Throughout all three of the focus group sessions, research participants often qualified some of their evaluative statements with phrases such as: “if we could only log onto...”, “if the WiFi was working that day...”, or “if we could trust the network....” In reviewing the context from which these phrases emerged, particularly when making evaluative statements toward an English assignment or activity, participants did not really speak to a value that the assignment had on their learning or engagement, but more so how the iPad and WiFi access issue affected their ability to conduct or complete the assignment.

You sometimes had to plan to do something off campus or on campus. At home it (the iPad) may be the only thing logging onto your WiFi, and you could get on, and do your work, no problem. But, when I was on-campus you just kind of expected it would take more time to get on.

Another participant remarked,

WiFi access was really bad in our class. You tell us to go to a web site and not everybody could. So then you had us go the site in small groups. One iPad is to go there. The other iPads do something else, just so the network wouldn't get crowded. It kind of defeats the purpose of everyone having an iPad.

Considering WiFi access issues certainly affected their planning and assignment management. And, it also affected how an assignment or an activity was

conducted. At times the work around for the access issues certainly complicated teaching and learning and made visible the iPad's shortcomings in this environment.

WiFi access issues also affected participants' reported anxiety levels. When discussing their *Animoto* or YouTube class presentations, the WiFi access issue added a new dimension.

Whether it's your professor or another student, there's always something going on with the technology. Sometimes you just don't know how to work it, and other times it's just not working like you expect it to. Throw in the brand new, never seen before iPad and you just wonder if going back to PowerPoint or using the teacher's computer is easier.

Another participant agreed and added, "Yah, it may not be that cool, or it's the same old stuff, but at least you're more confident that you can get it to work." A third participant wrapped up this part of the discussion:

I was already nervous about standing up front of the class. Then if your video is taking a while to load I just stand there looking dumb when everyone else was able to just go and do it. I have to worry not only if I did the assignment right, but if I could even show it. I mean it eventually worked, maybe after a second try, but if I just used your computer to put it on the screen, then it'd be over with faster.

Mobile friendly interface. Participants indicated that accessing the Blackboard course management system and research databases were not necessarily a problem, but navigation was difficult, and functionality was

awkward. Attempts by the students to navigate through Blackboard and research databases made vivid differences between “point and click” websites designed to be operated by a computer mouse and web applications that were designed for “touching the screen.” Participants made comments such as: “I hated fat-fingering everything. My finger is just too big to press those tiny buttons or links. It would take you two or three times to get where you wanted.” And, “You can’t just keep your finger there and scroll down. You have to keep tapping... Sometimes the iPad wouldn’t let you tap or scroll into the other pages.” After a while students were making decisions related to the appropriate technology given the assignment or activity. “I figured out very fast, what I could do or not do with the iPad and what I needed to do on my computer. I already know [snaps fingers] which [to use] when you tell us the assignment.”

As a closing statement to this issue, one participant made this evaluation, If SCC wants to take advantage of the iPad and iPhones, or any other mobile device, they are going to have to make versions [of their applications] that are mobile friendly. Otherwise people will only use their iPads and iPhones as a last resort—probably only to check a due date or something. It’s a cool device, but all this stuff was made before it. It [the SCC system] needs to catch-up.

Word processing. Extended word processing and specifically MSWord compatibility were frequently repeated issues raised in the focus groups when discussing the iPad’s value for a college English composition class. As stated earlier, research participants valued the ability to use their iPad and to type notes

quickly. For more preliminary word processing such as brief drafting, messages, and notes, many of the participants did not mind using the touch screen key board, and a few became adept in toggling between three touch screen options to get to numbers and symbols. However, there was a strong preference to type with the Bluetooth wireless keyboard.

With one exception (described later), participants stated that the iPad was not an adequate platform for more extended word processing. Two reasons emerged for this evaluation: 1) incompatibility with MSWord, and 2) lack of file management and file access capabilities. One purpose of the pilot program was to test the iPad's compatibility and functionality with the apps, particularly MSWord, that are available to students through the cloud-based mySCC. There were immediate functionality and access issues with using mySCC. Several participants also stated that they did not like "how MSWord looked" on the iPad screen and that using MSWord was awkward and less efficient. "Word was small on the screen. It makes it hard to tap into the option you need. So you have to enlarge the screen with your fingers, then tap, then go back. I don't know... I feel faster when I use my computer and mouse." When discussing the iPad's compatibility with mySCC several students said that they did not like having to save files on SCC's network and several said they did not trust it. "Logging onto mySCC was sort of iffy, so I didn't even bother trying to save files."

Participants critiqued the lack of file management and lack of windows. In other words, the iPad did not accommodate the way students prefer to construct essay drafts:

The iPad didn't work the way you taught us to write. Like you said, "You should never be writing zero to five pages the night before;" that most of the homework you assign is a draft of some part of the upcoming essay. I like being able to have different windows open, and going back and forth copying and pasting from past paragraphs or drafting [as] you had us do, or looking at your comments or the outline. And I like having a window for the web just in case I need to look up something quick.

Though it is possible to go between apps as well as run multiple apps at the same time, many students said that they did not prefer it on the iPad, commenting that it "felt slower" or that "you had to get used it."

Participants stated several times that they tried to type more formal and/or longer drafts on the iPad once or twice, but quickly defaulted to their computer or laptop. For most of the participants figuring out a new way to complete formal word processing was not worth the time. "When it comes down to it, I've used MSWord or Word Perfect, ever since I had to type my first paper, probably junior high. Why reinvent the wheel?" Their comments suggest that, for these students, a new way of producing essays was not worth their time.

In follow-up questioning most of the participants were aware that Apple offered a word processing app called Pages. Several explored and researched the App Store's word processing offerings. But, none of them purchased the app. Cost was a factor for some. Familiarity was a factor for others. Overwhelmingly participants did not see a need to try a word processing app with their iPad

because they already owned a program on their personal computer or laptop, had access to MSWord through SCC's computer labs and through mySCC.

Chapter 5 Conclusion

This dissertation study has been valuable in establishing a base line of practices and viewpoints that can inform how mobile technologies such as the iPad can enhance not only an English Honors class but also student engagement at the institutional level. This study has also been valuable in identifying the weaknesses and limitations of this new technology as it pertains to college composition competencies and syncing with SCC's network. One of the more significant findings is that iPad integration into one's academic life is related to individual lifestyle and preferences. While this dissertation study did uncover some individual effects that may be important to research further, the immediate purpose of the research was evaluate one small scale, local intervention in one community college English honors course. This closing chapter discusses: 1) Lessons Learned, 2) Researcher Reflections, 3) Emerging Action, and 4) Implications.

Lessons Learned

Access to the iPad enhanced interest and engagement for the ENG 102 Honors course, according to student reports. Enhancements occurred for the students/participants themselves, and in some cases for friends, family, and the community around them. Students/participants were excited and felt privileged to have iPads for their personal and academic use for the duration of the ENG 101/ENG 102 Honors sequence. When using their iPads or completing iPad assignments, students/participants were more involved in the processes and reported that they were acutely aware that they would be asked to discuss and

assess the assignment itself, how the iPad functioned, and whether they found value in the task.

Regarding the actual impact on their education, the iPad enhanced their engagement through:

- speed
- ease of access
- convenience
- efficiency

Individual's preferences and lifestyle also factored into how the iPad enhanced the course and class activities/assignments. It was apparent that the students/participants quickly identified how the iPad could be effectively integrated into their education as well as their work and social lives. However, "any time, any place" engagement was related to factors such as how busy and active students were on and off campus, access to WiFi hot spots, computing access at home, and familiarity with technology in general.

In general students reported that they found value in the iPad pilot program because they:

- Were able to have in their possession a cutting edge, state-of-the-art, innovative technology that students/participants were interested in testing and exploring.
- Participated in exploring and contributing to a new, cool, interesting component that was meant to enhance a traditional, mandatory college class.

- Learned about a new technology before anybody else, along with college composition proficiencies.
- Appreciated being treated as experts and authorities when interviewed about their experiences and recommendations.

Students/participants also expressed some negative and critical points of view regarding the pilot program because:

- Dealing with the uncertainty of an experimental, “let’s see what happens” approach caused anxiety and additional demands on their time.
- Learning a new technology along with doing experimental assignments caused some stress and anxiety as it affected their time and ability to focus on the skills, concepts, and information of college composition.
- Besides learning new English content and college composition proficiencies, students had the added pressure of learning a new mobile computing platform and new tasks.
- The technology was not robust and efficient in syncing with mySCC, SCC’s cloud computing platform.
- At times, the iPad assignment objectives and learning outcomes were not clear or not clearly connected to college composition proficiencies.

Collectively, students/participants reported that they valued the iPad for many informal, frequently repeated educational tasks:

- note taking
- conducting basic internet searches/informal research
- sending email
- drafting writing assignments
- rudimentary data/file management

However, participants reported that they did not value the iPad for other educational tasks including:

- formal and extended word processing
- electronic database research
- file storage and management
- accessing mySCC and mySCC applications.

Researcher Reflections

Beginning with some personal reflections regarding my role and ability to integrate the iPad into my course and to execute effective assignments and tasks, I have reason to be self-critical. The iPad and other WiFi tablet devices seem to offer the potential of enhancing learning through mobility, cost reduction, and enhanced learning efficiency. But I am unsure that I was able to fully capitalize on that promise during the course.

I often wonder whether I was not knowledgeable enough about the technology to fully bring out the full potential. I wonder whether I was not creative enough or was too focused on making the iPad fit my usual way of doing

things. I wonder if I was too entrenched in the computing methodology of the past 20 years, and whether my ignorance of the potential of the iPad is an indication of a generational gap. It would have been very easy to conclude, from my own perspective, that the iPad had little educational value in an Honors level college composition course. Regardless, one thing is certain: the higher level of iPad integration into a course and/or instructional framework, the more the technology can dramatically impact teaching, schedule and pace, presentation, and a sense of success.

By grounding the data collection and analysis in my philosophical and theoretical framework as indicated in the literature review, I have strengthened my appreciation of Friere's (1997) notion of the dialogic process. Students' experiences should not only be tolerated, but also need to be valued by the institution. In this study, my students' experiences were treated as the most significant source of information and testimony about the usefulness of the iPad in a community college English composition class. This provided valuable information for me as the researcher and also served as a form of validation of the participants and their views. In this study the students were not simply being observed and analyzed by an objective, third party researcher. They were constructing their experience on their own terms and creating knowledge and insights that would teach them, their classmates, and their instructor.

Designing, participating, and executing an action research study was also a transformative experience for me. As a professor, I used to believe that I should identify classroom management and learning issues in context, informally, as they

arise. Interventions and analysis may take place reactively, spontaneously, and informally. But deploying an intentional action research design has changed my view about the value of using more systematic planning, activity preparation and thoughtful activity design for student success. My conclusions, recommendations, and planned further actions are supported by tangible data rather than by intuition alone.

Short Term Consequences of the Study

This research project has already prompted action. At the institutional level three issues have been identified and are now part of the SCC conversation about strategic planning.

- SCC's wireless network will be tested and assessed in order to address the issues of insufficient capacity. There is no doubt that more and more mobile devices are coming to campus and utilizing the WiFi network. If the iPad and the notion of mobility are to have educational and institutional value, they must be supported with robust WiFi infrastructure.
- The Information Technology (IT) department is now considering the value of installing Bluetooth wireless printers in several of SCC's open and departmental computer labs. If more personal laptops are to be supported and WiFi tablet devices are to be valued, then more WiFi infrastructure should be installed.
- The English Department faculty has begun a discussion that advocates a shift in class-room policy limiting student use of smart phones, WiFi

tablets, and laptops in the classroom. English Department faculty members are being asked to reconsider or modify bans on classroom use of these technologies. English Department faculty members are also being urged to use more electronic documents and files rather than paper copies in the interest of providing mobile access cost reduction, and responsible environmental stewardship.

During the coming academic year another professor will be using iPads to pilot an ENG 101/ENG 102 Honors accelerated cohort. The class is designed to move honors students through a six-credit hour college composition requirement in only one semester. The iPad will be used to add a mobility component and, it is hoped, to increase student engagement. I will serve as a consultant and advisor to the professor, and we will work together to research, design, and deploy iPad activities that will support students at an accelerated pace.

Implications

The iPad's impact on student engagement has positive potential, but this potential was not fully realized during this period of this study because of:

- WiFi network capacity/access issues—The iPad ability to access a WiFi network is inconsistent, and SCC's WiFi network is not yet ready to handle many mobile devices in such a concentrated area as a classroom.
- Compatibility issues—Web based systems that offer the promise of mobility through standard personal computers or laptops are not necessarily compatible with mobile computing devices such as smart

phones and WiFi tablets like the iPad. There are significant functionality issues between web sites and systems designed for traditional computing and mobile applications designed to be navigate through a touch screen.

- Functionality issues—the iPad’s functionality proved limited when it came to assignments and tasks that required deeper or longer student engagement. Students preferred to use standard computers and familiar computer programs to compose and produce formal essays and more extensive research and writing projects.

Further research and testing is warranted, in my judgment. With these issues anticipated, professors can make adjustments that may amplify the iPad’s potential positive impact on student engagement. Community college instructors may want to consider:

- How more small group class work can reduce the number of iPads accessing a wireless network at the same time. Alternatively, instructors may want to allow students to access the wireless network or web based class activities from different hot spots.
- Researching, exploring, and relying upon more iPad apps. As there is a functional distinction between point and click websites and their mobile versions, one must address how functionality issues can disrupt the instruction and learning processes. (This may be a short lived problem, as many companies, institutions, and individuals are

designing more and more mobile apps and mobile-compatible versions of web pages.)

- Offering alternative or simultaneous access to traditional desk top computers when appropriate to allow for differences in functionality and personal preferences. iPads and tablet computing devices are in their infancy, so the technology itself will still be unfamiliar for many community college students. Smart phones seem to be more common and familiar than they were a few short years ago.

The iPad's impact on student learning, engagement, and success is potentially immense. In fact the iPad's impact may be only limited by its relative newness and unfamiliarity and the level of creativity and imagination of the educators and their students. As more mobile devices are brought to campus institutions and educators should take the lead in supporting the great potential of discovering technologies like the iPad to increase student success in community colleges.

REFERENCES

- ACU Connected. (2010). *2009-10 Mobile learning report*. Abilene, TX: Abilene Christian University.
- Al-Fahad, F. N. (2009). Students' attitudes and perceptions towards the effectiveness of mobile learning in King Saud University, Saudi Arabia. *The Turkish Online Journal of Educational Technology*, 8, 111-119.
- Anderson, J. Q., & Rainie, L. (2008). *The future of the Internet III*. Washington, DC: Pew Internet & American Life Project. Retrieved from <http://www.elon.edu/eweb/predictions/expertsurveys/2008survey/default.xhtml>
- Apple. (2011). *iPad*. Retrieved from <http://www.apple.com/ipad/>
- Astin, A.W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, 25, 297-308.
- Auerbach, C. F., & Silverstein, L. B. (2003). *Qualitative data: An introduction to coding and analysis*. New York, NY: University Press.
- Blackboard Learn. (2011). Retrieved from <http://www.blackboard.com>
- Brydon-Miller, M., Greenwood, D., & Maguire, P. (2003). Why action research? *Action Research*, 1, 9-28.
- Caverly, D. C., Ward, A., & Caverly, M. J. (2009). Techtalk: Mobile learning and access. *Journal of Developmental Education*, 33(1), 38-39.
- Center for Community College Student Engagement (CCCSE). (2008). *Imagine success: Engaging entering students (2008 SENSE field test findings)*. Austin, TX: The University of Texas at Austin, Community College Leadership Program.
- Chao, P. Y., & Chen, G. D. (2009). Augmenting paper based learning with mobile phones. *Interacting with Computers*, 21, 173-185. doi: 10.1016/j.intcom.2009.01.001
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. London, UK: Sage.
- Cohen, A. M., & Brawer, F. B. (2008). *The American community college (5th ed.)*. San Francisco, CA: Jossey-Bass.

- Collins, A. & Halverson, R. (2009). *Rethinking education in the age of technology: The digital revolution and schooling in America*. New York, NY: Teachers College Press.
- Corbeil, J.R. & Valdes-Corbeil, M.E. (2007). Are you ready for mobile learning? Frequent use of mobile devices does not mean that students or instructors are ready for mobile learning and teaching. *Educause quarterly*, 2, 51-58.
- Corey, S. M. (1954) Action research in education. *Journal of Educational Research*, 47, 375-380.
- Creswell, J. W. (2007). Qualitative research designs: Selection and implementation. *The Counseling Psychologist*, 35, 236-264. doi: 10.1177/0011000006287390
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Los Angeles, CA: Sage.
- D'Andrade, R. (1991). The identification of schema in naturalistic data. In M.J. Horowitz, *Person schemas and maladaptive interpersonal patterns*, pp. 279-301. Chicago, IL: University of Chicago Press.
- Doe, C. (2009). A look at...mobile devices. *Multimedia & internet @ schools*, 16(2), 30-33.
- Educause Center for Applied Research. (2010). *Study of undergraduate students and information technology* [Data file]. Retrieved from: <http://www.educause.edu/ecar>
- Erickson, F. (2004). Demystifying data construction and analysis. *Anthropology and Education Quarterly*, 35, 486-493.
- Ferenstein, G. (2011, February 14). Apple's iPad officially passes the higher education test (exclusive). *Fastcompany.com*. Retrieved from <http://www.fastcompany.com/1727292/apple-ipad-officially-passes-the-higher-education-test-exclusive>
- Fischman, J. (2011, March 16). iPads: Bane or boon to college teaching? *Chronicle of Higher Education*. Retrieved from: <http://chronicle.com/blogs/wiredcampus/ipads-bane-or-boon-for-college-teaching/30385>
- Freeman, D. (2011, March 23). iPads in the classroom: MBA students weigh in. *ASU News*. Retrieved from http://asunews.asu.edu/20110322_business_ipadtrials

- Freire, P. (1997). *Pedagogy of the oppressed* (20th ed.). New York, NY: Continuum.
- Gaffney, M. (2008). Participatory action research: An overview. *Kairaranga*, 9, 9-14.
- Huang, J. H., Lin, Y. R., & Chuang, S. T. (2007). Elucidating behavior of mobile learning: A perspective of the extended technology acceptance model. *The Electronic Library*, 25, 585-598. doi: 10.1108/02640470710829569
- Hussain, I. & Adeeb, M.A. (2009). Role of mobile technology in promoting campus- wide learning environment. *The Turkish Online Journal of Educational Technology*, 8(3), 48 – 56.
- Hussar, W. J., & Bailey, T. M.(2009). *Projections of education statistics to 2018* (NCES 2009062). Washington D.C.: National Center for Education Statistics.
- Kiley, K. (2011, May 25). Tablets, yes; E-texts, maybe. *Inside Higher Education*. Retrieved from http://www.insidehighered.com/news/2011/05/25/students_see_educational_value_in_tablet_computers_but_not_digital_textbooks
- Kolowich, S. (2010, December 22). Apple of their eye? *Inside Higher Education*. Retrieved from http://www.insidehighered.com/news/2010/12/22/college_students_test_drive_the_apple_ipad
- Kuh, G. D. (2008a). Diagnosing why some students don't succeed. *Chronicle of Higher Education*, 55(16), D12.
- Kuh, G. D. (2008b). Why integration and engagement are essential to effective educational practice in the twenty-first century. *Peer Review*, 10(4), 27-28.
- Kuh, G. D. (2009). The national survey of student engagement: Conceptual and empirical foundations. *New Directions for Institutional Research* 141, 5-20.
- Kulkusa-Hulme, A., & Traxler, J. (2005). *Mobile learning: A handbook for educators and trainers*. New York, NY: Routledge.
- Maricopa County Community College District Office of Institutional Effectiveness (2011). *Maricopa trends: Maricopa Community Colleges District summary of fiscaly FTSE*. Retrieved from http://www.maricopa.edu/business/ir/trends/HTML/FY_DO.htm

- McRea, B. (2010). 5 higher ed tech trends to watch in 2011. *Campus Technology*. Retrieved from: <http://campustechnology.com/articles/2010/12/09/5-higher-ed-tech-trends-to-watch-in-2011.aspx>
- Meyer, L. (2011, March 14). Survey finds strong support for educational technology. *Campus Technology*. Retrieved from <http://campustechnology.com/articles/2011/03/14/survey-finds-strong-support-for-educational-technology.aspx>
- Middle Class Task Force. (2009). *Staff report: Barriers to higher education*. Washington, D.C: The Vice President of the United States.
- Morgan, D. L. (1997). *Focus groups as qualitative research* (2nd ed.). Thousand Oaks, CA: Sage.
- Mostafavi, B. (2011, January 29). Laptops, iPads and iPhones help cut costs on college textbooks: eTextbook sales boom at the University of Michigan-Flint. *Mlive.com*. Retrieved from: http://www.mlive.com/news/flint/index.ssf/2011/01/laptops_ipads_and_iphones_hel.html
- Office of Institutional Research, Planning, and Assessment (OIRPA). (2008). *The community college survey of student engagement (CCSSE): Summary of 2008 survey results* (Research Report No. 24-08). Annandale, VA: Northern Virginia Community College.
- OSU News and Communication. (2011, May 3). iPad study released by Oklahoma State University. *Oklahoma State University News*. Retrieved from: <http://news.okstate.edu/press-releases/929-ipad-study-released-by-oklahoma-state-university>
- Park, N. (2010, August 5). Med students receive new iPads. *The Stanford Daily*. Retrieved at <http://www.stanforddaily.com/2010/08/05/med-students-receive-new-ipads/>
- Prensky, M. (2001a). Digital natives, digital immigrants. *On the Horizon*, 9(5)1–6.
- Prensky, M. (2001b). Digital natives, digital immigrants, part II: Do they really think differently? *On the Horizon*, 9(6), 1–6.
- Rendón, L. (1983, April). *Chicano students and institution related determinants of educational outcomes in South Texas Community College*. Paper presented at the annual convention of the American Association of Community and Junior Colleges, New Orleans, LA.

- Rendón, L. I. (1993). *Transforming at-risk students into powerful learners*. Paper presented at the national conference of the American Association for Higher Education, Chicago, IL.
- Rendón, L. (2000). *Fulfilling the promise of access and opportunity: Collaborative community colleges for the 21st century. New Expeditions: Charting the second century of community colleges* (Report No. 3). Annapolis Junction, MD: Community College Press.
- Rendón, L. I. (2002). Community college puente: A validating model of education. *Educational Policy*, 16, 642-667.
- Ryan, G. W., & H. Bernard, R. (2003). Techniques to identify themes in qualitative data. *Field Methods*, 15(1):85-109.
- Schaffhauser, D. (2011, June 15). Is the iPad ready to replace the printed textbook? *Campus Technology*. Retrieved from <http://campustechnology.com/articles/2011/06/15/is-the-ipad-ready-to-replace-the-printed-textbook.aspx>
- Standard and Poors. (2011). *Apple, Inc.* Retrieved from <http://solutions.standardandpoors.com/SP/stkscreener/Overview.do?ticker=AAPL&pc=JAN&auth=085150196224055233187040139188220016243096142070&tracking=JAN>
- Tadger, R. (2010). What is cloud computing? *PCmag.com*. Retrieved from <http://www.pcmag.com/article2/0,2817,2372163,00.asp#fbid=15Bpj3O73bA>
- Ting, R. Y. (2005). Mobile learning: Current trend and future challenges. *Proceedings of the fifth IEEE International Conference on Advanced Learning Technologies*, (pp. 603-607). Kaohsiung, Taiwan: IEEE Computer Society. doi: 10.1109/ICALT.2005.202
- Tinto, V. (1997). Classrooms as communities: Exploring the education character of student persistence. *Journal of Higher Education*, 68(6): 599-623.
- Traxler, J. (2007). Defining, discussing, and evaluating mobile learning: The moving finger writes and having writ.... *International Review of Research in Open and Distance Learning*, 8(2), 1-12. Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/346>
- University Information Technology Services. (2011a). *What are bits, bytes, and other units of measure for digital information?* Retrieved from <http://kb.iu.edu/data/ackw.html>

- University Information Technology Services. (2011b). *What is WiFi?* Retrieved from <http://kb.iu.edu/data/amzj.html>
- Wang, M., Shen, R., Novak, D. & Pan, X. (2009). The impact of mobile learning on students' learning behaviours and performance: Report from large blended classroom. *British Journal of Educational Technology*, 40, 673-695. doi: 10.1111/j.467-8535.2008.00846.x
- Western Interstate Commission for Higher Education (WICHE). (2008). *Knocking at the college door*. Boulder, CO: author.
- Wieder, B. (2011, February 28). Homework hits the small screen at Purdue U. *Chronicle of Higher Education*. Retrieved from: <http://chronicle.com/blogs/wiredcampus/homework-hits-the-small-screen-at-purdue-u/30047>
- Wieder, B. (2011, March, 13). iPads could hinder teaching, professors say. *The Chronicle of Higher Education*. Retrieved from: <http://chronicle.com/article/iPads-for-College-Classrooms-/126681/>
- Ziegler, M. (2001). Improving practice through action research. *Adult Learning*, 12(1), 3-4

APPENDIX A
INSTITUTIONAL REVIEW BOARD APPROVAL



Office of Research Integrity and Assurance

To: Christopher Clark
Farmer Edu

From: Mark Roosa, Chair *sm*
Soc Beh IRB

Date: 02/21/2011

Committee Action: Exemption Granted

IRB Action Date: 02/21/2011

IRB Protocol #: 1102006032

Study Title: Technology that Breaks Barriers: Mobile Engagement and the Community College Student

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2).

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

APPENDIX B

iPAD COHORT DEMOGRAPHICS QUESTIONNAIRE

Initials:

Age:

Circle One.

Male/Female

Single/Married/Divorced

Children: Yes/No
if yes, how many?

Work: NA/part-time/full-time
Approximately how many hours per week:

Part-time/Full-time student

Is English your first language: Yes/No
if no, what is your first language?

List any co-curricular activities you are involved with (i.e. campus clubs/organizations, etc.)

List any extra-curricular activities you are involved with (i.e. sports [on- or off-campus], clubs, organizations, etc.)

APPENDIX C

PRIVACY/OPT-OUT STATEMENT

Dear _____:
Date: _____

I am an English faculty member at Scottsdale Community College as well as a doctoral student at Arizona State University. I am conducting a research study to discover how a new mobile technology, the Apple iPad, affects student engagement in an ENG 102 Honors class.

I am inviting your participation, which will involve your participation in the iPad Pilot program and interview questions in focus groups. Each focus group will be audio recorded. You have the right not to answer any question and to stop participation at any time.

Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. In other words your decision to withdraw from the focus groups will not negatively affect your grade.

In exchange for your participation in our research and focus groups you are able to use and take home an Apple iPad free of charge and McGraw-Hill has donated an eTextbook *Connect Composition* free of charge for the duration of your enrollment in the ENG 102 Honors..

There are no foreseeable risks or discomforts to your participation. Because of the nature of the class pilot and focus groups complete confidentiality is not possible. The results of this study may be used in reports, presentations, or publications. Your responses will be quoted but your name will not be used. The primary purpose for recording your responses is for theme identification that will be used for descriptive analysis.

If you give permission to be taped, you have the right to ask for the recording to be stopped. I will be using an iPhone and an iPad as recording devices. The audio recording will be stored on my personal iTunes account. The audio data will be destroyed as soon as possible and only will be used internally for the purpose of developing research, presentations, and reports.

If you have any questions concerning the research study, please contact the research team: Dr. Christopher M. Clark (Principle Investigator): 480.409.2807, Christopher.Michae.Clark@asu.edu, or Larry T. Tualla (Co-Investigator): 480.423.6773 and larry.tualla@sccmail.maricopa.edu. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

By signing below you are agreeing to participate to in the study.

Signature

Date

By signing below you are agreeing to be audio-taped

Signature

Date

APPENDIX D

PILOT STUDY INTERVIEW SCRIPT

Location: Scottsdale Community College, Language and Communications Division

Participants: ENG 102 Honors, iPad Pilot Cohort (9 females, 4 males)

Focus Groups: Students may volunteer for 1 of 3 focus group sessions

Setting: LC 308 (conference room)

Estimated Time: 60 minutes (180 minutes total)

Script: Before the start of a focus group, the researcher will read a prepared statement stating the purpose for the pilot study as it pertains to institutional and doctoral research. The researcher will include a safety and privacy statement as well as the “opt-out” policy. The researcher will describe the data collection and storage methods. The researcher will acquire signatures from participants who agree to inform the study.

Questions:

- 1) Introduce yourselves: Name, hometown, major/academic interest
 - Follow-up 1: how many of you are full-time students?*
 - Follow-up 2: how many of you work?*
 - Follow-up 3: could you describe what it is like to go to school, work, as well as take care of you other responsibilities.*

- 2) Tell me why you chose a community college rather than another option such as a technical school or university.
 - Follow-up 1: can you explain why you chose Scottsdale Community College.*

- 3) Tell me about an educational experience or activity that involved the use of the iPad.

- 4) Tell me about a time when your learning or motivation to succeed was influenced through the use of the iPad.

- 5) How do you feel/What do you think about being part of one of several iPad pilot programs across the nation?
 - Follow-up 1: can you describe what others' reactions were when they found out you were part of an iPad Pilot Program?*
 - Follow-up 2: tell me how that made you feel.*

APPENDIX E
FOCUS GROUP SIGN-UP SHEET

Focus Group Sign-up (est. time 75 minutes)
Location: LC308 (conference room)

Tuesday, April 26: 10:30-11:45am

- 1)
- 2)
- 3)
- 4)
- 5)

Thursday, April 28: 10:30-11:45am

- 1)
- 2)
- 3)
- 4)
- 5)

Thursday, May 5: 10:30-11:45am

- 1)
- 2)
- 3)
- 4)
- 5)

APPENDIX F
FOCUS GROUP INTERVIEW SCRIPT

Location: Scottsdale Community College
Participants: ENG 102 Honors iPad Pilot cohort

Focus Groups: 3 groups, 13 participants total

Setting: LC308, conference room

Data Collection Technology: iPhone and iPad (audio recording only)

Est. Time: 75 minutes/focus group

At the beginning of each focus group, the researcher will read a prepared statement detailing the purpose of the study as it pertains to institutional and doctoral research. The researcher will read a privacy statement as well as the “opt-out” policy. The researcher also will describe the data collection methodology as well as how the data will be secured.

Questions:

- 1) *In the previous focus group, many of you stated that the iPad allowed you to take notes, complete assignments, and educational tasks more quickly and efficiently. Can you describe other educational activities by which you utilized the iPad for its efficiency?*

Follow-up: Can you also explain how the iPad affected your efficiency with your other responsibilities and obligations?

Follow-up: How has the idea of efficiency affected your motivation and ability to succeed in school? Why? How so?

- 2) Describe a memorable assignment that you had to do for ENG102 Honors that involved the use of the iPad. What was the process like? What did you learn?

Follow-up: How did using the iPad help or hinder the completion of this assignment?

Follow-up: Describe your thoughts or feelings as you worked through the activity.

- 3) Describe an ENG102 writing assignment/task that involved the use of the iPad.

Follow-up: Tell me how the use of the iPad helped or hindered the writing.

- 4) Describe an ENG 102 research assignment that involved the use of the iPad.

Follow-up: Tell me how the use of the iPad helped or hindered the research.

- 5) Based upon your experiences in iPad Pilot Program, can you suggest ways that the iPad can be utilized more efficiently for an English class?

Follow-up: How can the iPad be utilized more efficiently in your general studies and educational activities?

- 6) Looking back at your experiences iPad Pilot Program, tell me your evaluation of the iPad as a tool for college composition/writing.

Follow-up: How did the iPad assignments affect your perspective on the subject/content/concept?

Follow-up: How did the iPad assignments affect your schedule and time prioritization with other assignments and your other social/work activities?

- 7) Tell me what you learned about the use of mobile, tablet technology for your education?

Follow-up: Tell me what you learned about the use of wireless internet for your education.

- 8) Describe how you changed as a student who now uses technology?

Follow-up: What lessons or skills will you take forward into your future academic career?

APPENDIX G

BIOGRAPHY VIDEO ASSIGNMENT PROMPT

Using your maricopa.edu email account:

- 1) Sign up for a **youtube.com** account
- 2) Sign up for a free **animoto.com** account

Writing Exercise:

Based upon today's discussion/brainstorm, type a brief paragraph for each prompt:

- 1) Who are you culturally? (Think: family; education race, ethnicity, "home country;" religion; politics; socio-economic class)
- 2) Who are you sub culturally? (Think: as an individual, your "likes," job, clubs, sports, extra-curricular activities, volunteer work, hobbies, music-art-film-fashion tastes etc.)
- 3) Who are you academically/professionally? (Think: schools, major, classes, future goals and aspirations)

Animoto Exercise:

As demonstrated in class, create a 30 second (only) video that visually represents/exemplifies what you discussed in the three paragraphs. Please use as many personal pictures as possible, only use clip art, logos, and other visual representations as necessary.

Upload both to the Blackboard Discussion Board:

- 1) Post the three paragraphs first: In the subject heading title your post: **Who Am I? (Your Name)**. Then copy and paste the three paragraphs in the text box. Submit your post.
- 2) Reply to your **Who Am I Post? (Your Name)** post: In the subject heading title your reply post **Animoto Video**. Embed your YouTube video.

Animoto Presentation:

Next class each of you will introduce yourself by discussing important details from your three paragraphs then playing your Animoto video on the iPad

Think Hard and Have Fun!!!

APPENDIX H

GROUP FIELD RESEARCH ASSIGNMENT PROMPT

Announcement posted on Blackboard Tuesday, February 1, 2011

For Thursday: students were asked to get into groups of 3 in order to complete an active learning exercise. All of your work must be conducted, recorded, and presented on your iPad.

This activity will be filmed. All groups must be complete and return to class by 10:50am so some pre-planning is necessary. You will want to meet and start this exercise well before class starts.

You must meet at another location/department on campus and interview someone who works or is affiliated with SCC other than another student.

Member 1: Take a picture of the person interviewed with your mobile phone (be sure to ask politely/nicely). Send the pic to your email and save the picture to your iPad to be shown later. Using iPad Notes, record the person's name, position/job title at SCC, as well as what department he/she works.

Member 2: Ask the person 3 questions and record his/her responses in iPad Notes: 1) What is a current debatable issue that concerns you most in America? 2) Why? 3) What would you like to see done about it? Or, how would you like to see it solved?

Member 3: Upon hearing the topic or issue of most concern, do a quick Google search and locate a credible/reliable article or website that will provide background info and further detail that will give us a better understanding of the issue/topic. Be ready to explain why you thought the Google source was reliable/credible. Then give us a brief explanation that details or provides the various sides to the issue.

You're being given some part of class time to conduct and complete this activity. Please have a plan that will get you to completion on time. Return to class by 10:55am so that each group can report the findings.

APPENDIX I

THE ANTI ADVERTISEMENT ASSIGNMENT PROMPT

Announcement posted on Blackboard Thursday, February 17, 2011

These are the instructions for your 2nd *Animoto* video assignment due Thursday, 2/28. Still continue to use the free version; your video should only be 30 seconds long.

Create a short video that goes back and forth between the ad and brief text that analyzes the appeal. Much like our group Ad Appeals exercise today you will analyze a print ad and using the statement/evidence/explanation format analyze which of the 15 appeals the print ad best exemplifies

Use your iPad to Google/browse for images of print ads. When you find one use the iPad's screen capture function by simultaneously holding the "Home" button (at the bottom of the screen) and the "Sleep" button (at the top of the iPad, opposite of the headphone jack). It will automatically save the image on your screen to PHOTOS. Then email or use your iTunes account to get that image onto your computer.

You will use the photo of the print ad as the starting point of your video.

Using text identify the appeal. (Choose only one of the 15.)

Then pick out certain features, parts, specific images from the overall ad as evidence of the appeal.

Use a photo editing program that will allow you to crop the specific features, parts, and specific images as separate photos (jpegs).

If you do not have Photoshop or a photo editing program on your computer, Irfanview is a free program you can download off the web that will allow you to crop and resize parts of the overall image. Just type "Irfanview" in your search browser and you will find multiple places to download.

Then using a mixture of Fowles' definitions offer a brief analysis of why those smaller parts are evidence of the appeal you claim.

Of course you can frame this video presentation with some music. Please export your *Animoto* video to your YouTube account.

Get started this weekend. However, I will present to you a sample I did during Tuesday's class. If you are having trouble please visit me during office hours next week.

APPENDIX J

RESEARCH ADVERTISEMENT ASSIGNMENT PROMPT

Research Project Animoto Vid II and Field Research/Survey

By now you have already produced a 30 second Animoto video that is a multimedia representation of your 3 Paragraph Intro. In a sense it advertises your research project by providing an effective example that sets the tone (context), introduces the debate/issue/controversy with some of your gathered research data (background), and stated your argument (thesis statement/thesis paragraph).

Next, find 1 professor, 1 friend (on/off campus), and 2 classmates (not in ENG 102), to view either the YouTube or *Animoto* versions of the “3 Paragraph Intro Ad”.

Ask them to answer these questions for each video:

- 1) Did the images set the appropriate tone? What emotional effect did the images have?
- 2) Did the music set an appropriate tone? How did the music change or enhance the effect of the images?
- 3) What was the issue/controversy/debate? Was it effectively presented?
- 4) Was the thesis statement clearly stated? Do you agree or disagree? Why or why not?

Ask them to answer by email/on YouTube comments, or comment on your Facebook/Myspace/Twitter etc...

Semester Presentation:

4-5 minute, Visual/Multimedia Presentation of your choosing that 1) highlights the discourse surrounding the video, 2) what you learned about multimedia presentations and how did it enhance your understanding of the issue, and 3) how did it enhance your understanding of Argumentation?

Everyone will present their videos, results, and feedback May 3.