IPAD DIFFUSION IN A HIGHER EDUCATION ORGANIZATION

Phillip Neely, Ph.D.
Associate Professor of Criminal Justice
Saint Leo University
Phillip.neely@saintleo.edu
404-392-6200

Camille Neely, MS.
Master's Student
Saint Leo University
camille.neely@email.aaintleo.edu
404-273-6299

Abstract

The case study explored if after two years of 100 percent conversion of electronic textbooks and handouts with the use of the iPad, was still effective for the students and faculty at Brown Blackie College. Jwaifell & Gasaymeh (2003) states, “case study is one of the important approaches mentioned by Creswell (2007), which represents exploratory and descriptive research approach” (p. 141). Anonymous informal surveys were distributed to 27 students, and 9 adjunct instructors at Brown Blackie College. The ages of the students ranged from 19 to 55. The average length of attendance to the institution ranged from nine months to 18 months. The age for the adjunct instructors at the institution ranged from 23 to 49 and the educational background ranged from a Master’s degree to Doctorate degree, in several concentration areas. The range on attendance to the institution ranges from six months to four years. For the focus group discussion, there were nine participants. The participants for the focus group discussion consisted of students and adjunct instructors. No age or credentials were gathered during the discussion. Based on the results of the surveys, the majority of the students and faculty indicated that the use of the iPad for handouts and electronic textbooks were effective and that they were very satisfied with the iPad as the technological tool being used as the delivery method. During the focus group discussion, the majority of the participants indicated that they also were satisfied with the iPad and a tool to receive and deliver electronic textbooks and handouts. While the majority on the students and the faculty agreed that the iPad was an effective tool to receive and deliver electronic textbooks and handouts, more needs to be considered in providing word processing and printing.

Keywords: Technology, Higher Education, Business Integration

Organization
Brown Blackie College was founded in Salina Kansas in 1982. At that time, it was known as the Kansas Wesleyan School of Business. In 2003, the Education Management Corporation (EDMC) acquired the schools of Brown Mackie College. According to the Brown Blackie College national web site (2014), Brown Blackie College is a nationally accredited institution. The agency that accredits Brown Blackie College is The Accreditation Council for Independent Colleges and Schools (ACICS).

Brown Blackie College is a for profit higher learning institution. The college offers several degrees and certifications. A student can obtain a bachelor’s and associate’s degree in fields such as, education, information systems, legal studies, health services, criminal justice and business. Brown Blackie College has 28 schools and is owned by the EDMC.

Innovation

Textbooks and the cost of textbooks are one of the many issues students face when deciding to attend an institution of higher education. With the rapid increase of technology, Brown Blackie College piloted a program for the use of iPads as a tool to get electronic textbooks and handouts as opposed to having traditional textbooks and paper handouts (Fuhrman, 2013). From the results of the pilot program, Brown Blackie College partnered with Apple Inc. as a massive rollout to provide all students entering the institution with iPads.

Technology is a very crucial part of the education in the 21st century. Brown Blackie College has resolved to be a front runner in implementing such technology. Brown Blackie College is one of the first institutions to convert to 100 percent of their students and faculty to using electronic textbooks and electronic handouts.

The Five Stages of the Innovation Process

Hebert (2012) notes that one of the most influential researchers of the innovation diffusion theory is Everett Rogers. According to Rogers (2003), there are five stages in the innovation process, agenda-setting, matching, redefining/restructuring, clarifying and routinizing. The innovation process in an organization is divided into two areas; of initiation and implementation. The initiation process consists of agenda-setting and matching, which identifies the problem and aligns it with the innovation to generate resolution.

Agenda-Setting

According to Rogers (2003), “At the agenda-setting stage, one or more individuals in an organization identify an important problem and then identify an innovation as one means of coping with the problem” (p. 422). Brown Blackie College stakeholders noticed that their students were having issues purchasing their text books, therefore, in keeping with the 21st century, the institution chose to employ technology into its educational system.

Matching

The President of Brown Blackie College stated, “At Brown Blackie College, we aspire to be at the forefront of educational innovation and have a responsibility to prepare students for the ever-evolving digital environment” (Fuhrman, 2013 p. 2).

Redefining/Restructuring
Implementation is the makeup of everything that is done and the decisions encompassed in the utilization of the innovation. The implementation process consist of three areas: redefining/restructuring, clarifying, and routinizing. To gauge the reception of 100 percent conversion to eText, Brown Blackie College only implemented the program for new students and faculty at select campuses (Fuhrman 2013). Rogers (2003) explains that at the redefining/restructuring phase, “occurs when the innovation is re-invented so as to accommodate the organization’s need and structure more closely, and when the organization’s structure is modified to fit with the innovation” (p. 424). During the redefining process, a test conversion was done to determine if the new students entering the program and the faculty would be receptive to using the iPad as a tool to receive eText, electronic handouts, and direct instruction. The instructors were also use to accustom traditional textbooks and physical handouts. Now, having to use the iPad to review textbooks and, provide electronic handouts to students was a readjustment. Barry Einuf, the President of Brown Blackie College noted that a one-size-fits-all approach is not the direction the institution was taking with this project because not all faculty and would adapt to the process at the same speed and that careful consideration was being taken to meet the individual needs (Fuhrman, 2013).

Clarifying

Based on the results of the test conversion, and having the bugs worked out, Brown Blackie College and Apple Inc. implemented a massive roll out in November of 2012. Rogers (2003) describes the clarifying process as putting the organization’s innovation into widespread use so the members of the organization get a clearer understanding of the innovation.

Routinizing

The last stage in the organization innovation process is routinizing. “Routinizing occurs when an innovation has become incorporated into the regular activities of the organization and has lost its separate identity” (Rogers, 2003 p. 428). As a result of the focus groups discussion, and data from students and faculty surveys, the students and the faculty still regard the iPad implementation effective after two years of implementation. Several of the faculty that participated in the massive roll out of the iPad into organization were still in favor of using them to receive their eText and deliver electronic handouts on the iPad. The participating faculty also expressed how the use of certain apps on the iPad enhanced instruction and enabled them to communicate and even FaceTime with the students if a conference was needed off campus. The 27 students surveyed have been students of Brown Blackie College ranging from nine to 18 months. Additionally, the nine adjunct faculty members surveyed have been employed with the institution ranging from six months to 4 years. The educational level ranged was from Master’s to Doctoral degrees. All participants were trained by Brown Blackie College to use the iPad and the preinstalled apps. The technology level of each participant ranged from novice to proficient.

Attributes of Innovation
According to Demir (2006), the most researched and dominant model in the study of innovations is the Rogers’ theory of diffusions and innovations. The five attributes of innovation according to Rogers (2003) include relative advantage, compatibility, complexity, trialability, and observability. The five attributes of innovations were instrumental in the rate of adoption of the innovation.

Relative Advantage

In considering an adoption of an innovation, the question of what is in it for me or the organization and what makes this better than what we are currently using. “Relative advantage is the degree to which an innovation is perceived as being better than the idea it supersedes” (Rogers, 2003 p.299). Students and faculty used traditional text books and physical handouts before using iPads in the classroom. The cost of the text books and the amount of paper that was being used was costly to the students and the institution. By investing in the initial cost of an iPad and distributing any handouts electronically proved to be very cost effective for both the students and the institution.

Compatibility

Technology is gaining power and popularity in higher education. More traditional institutions are using technology to reach a vast majority of their students. Rogers 2003 defines compatibility as “the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs potential adopters” (p. 240). According to (Fuhrman, 2013) the President of Brown Blackie College felt that the iPad had the attributes that would allow its faculty to teach at a higher level. “The iPad and the resources embedded within it and available to it along with our faculty creates the most powerful academic resource for our student body” (Fuhrman, 2013, p. 2).

Complexity

Adoption of an innovation is based on a lot of variables. Complexity can be one of those variables. Rogers 2003 defines complexity as “the degree to which an innovation is perceived as relatively difficult to understand and use” (p. 257). During the focus group discussion, the participants acknowledged that they did receive adequate training on the use of the iPad and the apps that were preinstalled to enhance instruction. The older faculty members did express some apprehension about using the iPad to receive eText books and distribute handouts. Brown Blackie College provided training to all faculty and students so that they are comfortable with using technology in the classroom setting.

Trialability

Brown Blackie College chose to implement 100 percent iPad eText books in a select number of its institutions before releasing it to the entire organization to measure the responses from the faculty and students. Rogers (2003) describes trialability as the degree to an innovation being experimented on a limited bases. Implementing the test convergent provided the stakeholders within the organization with the data needed to either modify or abort the implementation of the iPad as a tool to provide faculty and students with the technology needed to receive eText books, electronic handouts, and engage instruction.
Observability

The partnership with Brown Blackie College and Apple Inc. has proven to be a lucrative one. Also, the book companies have profited from institutions contracting with them to provide eText through the use of technology. A degree to which others view the innovation is observability (Rogers, 2003). Other institutions have adopted the use of tablets as an instrument to provide eText books to their students and faculty.

The Five Adopter Categories

The adoption of an innovation transitions through several stages. (Rogers, 2003) discuss the five categories of adopters. The five stages include innovators, early adopters, early majority, late majority, and laggards.

Innovators

The President of Brown Blackie College was a visionary and driving force behind providing the organization with the technological opportunities that he thought would benefit the organization. Knowing that technology is vastly infusing education, as an innovator, the idea to use a popular in demand piece of technology that would interest the students entering the institution.

Early Adopter

Technology and the younger generation is a target area in higher education. Using the iPad as a tool to incorporate learning, instruction and engagement, was a way to attract the early adopters. Apple Incorporated is a leader in the world of technology. The President of Brown Blackie College used the popularity of the iPad to entice enrollment and innovated instruction at the institution. “The early adopter knows that to continue to earn this esteem of colleagues and to maintain a central position in the communication networks of the system, he or she must make judicious innovation-decisions” (Rogers, 2003 p. 283).

Early Majority

iPad and tablet usage is vastly becoming a tool used in higher education to alleviate cost and improve education. Rogers 2003, notes that the early majority is the group that is the largest category of adopters. Data gathered from the surveys revealed that the younger students and adjunct faculty found using the iPad easier to navigate therefore, they were more inclined to the diffusion of the innovation.

Late Majority

The late majority is the group that has seen the innovation in use, but are still skeptical. Adoption is done basically based on peer pressure. “The pressure of peers is necessary to motivate adoption” (Rogers, 2003, p. 284). The older adjunct faculty and older students and some that were not tech savvy expressed that they only became comfortable with using and
implementing the use of the iPad to receive eText and distribute electronic handouts based on the influence of another classmate or faculty member.

Laggards

During the focus group discussion, it was noted that there were still those that, after two years of the iPad being 100 percent implemented for eText and electronic handouts, still have issues with it and would prefer to use traditional text books and physical handouts. Rogers 2003, states that laggards have relatively traditional values and are suspicious of innovations and change agents.

Diffusion Network Characteristics

Homophily

Rogers (2003) defines homophily as “the degree to which a pair of individuals who communicate are similar. Such similarity may be in certain attitudes such as beliefs, education, socioeconomic status, and the like.”(p. 305). In an educational setting, there is a common characteristics between the institution, the faculty and the students. At Brown Blackie College, the academic standard is consistent throughout the organization.

Heterophily

“Heterophily is the degree to which pairs of individual who interact are different in certain attributes” (Rogers 2003, p. 306). Even though the students and the faculty in an educational setting share common characteristics, each have a varying degree of educational, socioeconomic and academic roles in the institution.

Change Agent Involvement

The President of Brown Blackie College is the change agent for the organization. The vision that he had to integrate the iPad into the institution was very instrumental in how the innovation was adopted. Due to several concerns expressed by the students and faculty, the President of the organization made the decision to infuse the iPad into the organizations educational structure.

Opinion Leaders’ Influence

Apple Incorporated is in the forefront of technology. As an opinion leader, Apple Inc. is constantly providing communication about their projects and how it will enhance performance. “Opinion leaders are members of the social system in which they exert their influence” (Rogers 2003, p. 27). In an educational, there are several opinion leaders. From the president to the students, opinion leaders are very influential and are vital to the adoption of an innovation. The President of Brown Blackie College seems to have been the main opinion leader in getting the organization to adopt the innovation into the organization. The President of Brown Blackie College reiterated that converting fully to eText and doing so
with Apple’s tablet technology would provide a powerful platform for students and faculty success at Brown Blackie College (Fuhrman 2013).

**System Description and Social Value Influence**

According to Rogers 2003, “The structure of a social system can facilitate or impede the diffusion of innovation” (p. 25). Higher education is growing and trying to reach more learners and all types of learners. Brown Mackie used a technological tool that is very popular in society and infused it into the educational structure of the organization. According to Brown Blackie College official web page, the organization encourages the students and faculty to Grow, Evolve, and Become. Brown Blackie College is devoted in assisting students to pursue knowledge and providing tools that will enable them to evolve and become prolific innovators.

**Innovation Consequences**

Approximately two years ago, Brown Blackie College implemented a massive rollout of 100 percent of the faculty and students converting to electronic text books and handouts. Every student after the rollout, was issued an iPad and trained to use the hardware and software that came preloaded on the tablet. Due to the massive rollout, there were some issues that occurred. Because of the total conversion, the infrastructure of several of the Brown Blackie College facilities had to be upgraded. According to the President of Brown Blackie College, “Brown Blackie College invested well over $2million in infrastructure, including wireless upgrades and multiple-location data points so that all students would have access, and training resources” (Fuhrman 2013 p. 3).

As a result of converting to the 100 percent use of electronic textbooks, the cost for textbook have decreased approximately $200 per quarter and more textbook distribution companies have contracts with the organization.

**Finding/Conclusion**

Two years ago, Brown Blackie College implemented a massive roll out to its 28 campuses in 15 states with more than 17,000 students with iPads. The organization also converted to 100 percent usage of electronic textbooks for the students and the faculty. The President of the organization saw the benefit of providing technology that was innovative and could be used as a tool deliver that technology and enhance the classroom experience.

After reviewing the surveys distributed to participating students and faculty, and the notes from the focus group, the majority of the students and faculty did consider the iPad and an effective tool the deliver and receive electronic handouts and electronic textbook. A few of the older members of each group expressed issues with only having their textbook only available on the iPad.

As a result of the surveys and focus group discussion, it was learned that the adoption of the iPad into this organization was successful. There were individuals in the organization that have gone through the diffusion of innovation process, but the vision of the opinion
leaders and the change agents in the organization have done what was necessary to keep the innovation relevant to the members of the organization.

Based on the research, a recommendation could be made to provide the students and the faculty with more access to paid app that could be used in the classroom setting. A recommendations could also be made to provide more technical support on the uses of new apps that are loaded to the iPad. It has been expressed that after the initial training, there is very little follow-up training or professional development. Although the organization has a partnership with Apple Incorporated, exploring the use of other tablet manufactures will be an option that will be well received throughout the organization.

References


Fuhrman, T, 2013. Making the iPad the Center of the Academic Experience. *Campus Technology, [Online]. Available at:*


Appendix I

IPAD SURVEY- STUDENT

Age:

Race:

How long have you attended Brown Blackie College?

Did you receive IPad training?

How often do you use your IPad to read your eText and handouts?
Always              Sometimes                    Never

Do you consider receiving your eText and handouts on your IPads effective?
If yes, explain

If no, explain

If given the choice, would you continue to receive your eText and handouts via the IPad?

If yes explain

If no, explain
Appendix II

IPAD SURVEY-FACULTY

Age:
Race:
Highest Educational Level:
What is your position at Brown Blackie College?
How long have you worked at Brown Blackie College?

Did you receive IPad training?

How often do you use your IPad to read your eText and handouts?
Always Sometimes Never

Do you consider receiving your eText and handouts on your IPads effective?
If yes, explain

If no, explain

If given the choice, would you continue to receive your eText and handouts via the IPad?

If yes explain

If no, explain
Appendix III

FOCUS GROUP QUESTIONNAIRE

1. In your opinion, what are the uses of the IPad in higher education?

2. How do you use or instruct using the IPad inside and outside of the classroom setting?

3. In your opinion, do you consider the IPad an effective tool for receiving electronic textbooks and electronic handouts?

4. What other uses or apps do you think are needed to improve the usability of the IPad in higher education and in the classroom setting?