M-Learning in an Undergraduate Business Program: A Recruitment Strategy, Student Perceptions, and Mixed Realities

Leslie J. Wardley[1], Ph.D., Lorraine Carter[2], Ph.D. & Gina D'Antonio[3], BBA

[1] Assistant Professor, Shannon School of Business, Cape Breton University, Canada

[2] Director, Centre for Continuing Education, McMaster University, Canada

[3] School of Business – Graduate, Nipissing University, Canada

Correspondence: Leslie J. Wardley[1], Ph.D., Assistant Professor, Shannon School of Business, Cape Breton University, Canada. E-mail: Leslie_Wardley@cbu.ca

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Abstract

The purpose of the study described in this paper was to explore student views (n=136) on the use of Apple iPad technology within various in-class courses offered by a School of Business at a small Ontario university and the overall effectiveness of a recruitment message by the School focused on mobile learning. The results of the study are as follows: 1) over half of the students had not heard about the offer of a free iPad before they enrolled at the University; 2) students expressed positive and negative views regarding the use of iPads in their face to face classes; and 3) differences between the students' and their instructors' use of iPads may have contributed to student frustration with the learning curve experienced by some faculty.

Keywords: millennials, tablet technology, mobile technology, digital technology, learning transferability, higher education, iPad

1. Introduction

Within post-secondary institutions, there have been significant changes in the tools that students use to gather and share information. Additionally, students are using mobile devices in all aspects of their lives with the average student owning more than two mobile devices (Benham, Carvalho, & Cassens, 2014). Based on these changes, it should come as no surprise that mobile devices have found their way into university classrooms.

After experiencing the benefits of digital tools in their day to day lives including gathering information, communicating with friends and families, socializing, banking, and so forth, students have started to advocate for increased integration of digital devices in classrooms (Benham, Carvalho, & Cassens, 2014). While mobile phones and laptops have been reported to be outpacing other forms of technology used by students, some students and educational institutions are making use of tablets such as the Apple iPad (Roberts & Rees, 2014). In early research on iPads and learning, 80% of student-respondents expressed positive opinions about the use of iPads for learning (MacLeod, 2015). Less is known about the use of iPads in specific disciplinary areas including business and the role of instructors in integrating these devices within their classrooms.

As institutions of higher education seek a competitive advantage and, in some instances, offer free devices to students to recruit them, it is important to understand this kind of strategy. To date, there is little reflected in the literature about recruiting students through the promise of free devices and the subsequent use of these devices in daily learning.

The findings reported in this paper represent a response to this gap. Specifically, the described study focuses on the student experience of using iPads in an undergraduate business program in which students received an iPad at no cost. In the study, attention was given to the use of the iPads to support learning and the students' perceptions of faculty competence to enable learning through the iPad.

2. Literature Review

2.1 Millennial Students

According to Fry (2016), "generations are analytical constructs, and developing a popular and expert consensus on what marks the boundaries between one generation and the next takes time" (para. 3). Demonstration of the variance in the literature regarding the age of millennials is noted here: some experts claim that millennials were born between 1980 and 1990 (Howe, & Strauss, 2000); others say between 1982 and 2004 (Ellin, 2014); and still others say between 1981 and 1997 (Fry, 2016). While variations exist in the ages and date ranges noted in the millennial literature, millennials are generally regarded to be between 20 to 36 years old.

In the literature about how different generations learn, generational exposures, trends, and common life events emerge as the key influences on how a generation interacts with the world and approaches learning. In the case of millennials, they have grown up with changes in technology in ways that no previous generation has ever experienced. As for the influence of technology on the lives of the millennial, it is difficult to quantify its influence since it is so pervasive. As the first generation to have grown up with technology from toddlerhood and, perhaps, even earlier, millennials have adopted the opportunities and drawbacks that come with a wired world. Called e-living by some (Brocade, 2011), the lifestyles of millennials led early researchers on millennials to the position that constant exposure to technology affects their thinking and the learning patterns (Prensky, 2001). Other researchers have identified an insatiable need for information (Prensky; Squire, & Steinkuehler, 2005). Taken together, these variables have compelled some universities to explore how technology can support their recruitment efforts as well as ensure that students are engaged and motivated in their courses.

2.2 The Recruitment-Technology-Learning Triangle in Post-Secondary Education

Technology as a means of recruiting post-secondary students and enabling learning has its primary roots in the web. The practices of universities relying on high school guidance counsellors, presentations by recruitment officers, and print booklets to encourage students to apply to and, ultimately, choose one university over another have changed dramatically (Diamond, Vorley, Roberts, & Jones, 2012). While many of these practices continue to be used, today's recruitment strategies include sophisticated email campaigns, Facebook sites, and testimonials made possible through interactive videos. Synchronous chat sessions with prospective students and different social media applications are elements of today's recruitment campaigns (Leng, & Leng, 2014). How courses are delivered such as through online and blended learning models can also be a powerful recruitment tool (Irvine, Code, & Richards, 2013). Some millennial learners are choosing programs that enable them to balance study, work, family, and other responsibilities. These programs necessarily use technology to facilitate learning (Betts, Hartman, & Oxholm, 2009). Interestingly, the millennial undergraduate has been reported to be more like the adult learner than previous undergraduate students (Margaryan, Littlejohn, & Vojt, 2010). Like more life experienced adult learners, many of today's undergraduates are looking for technically-enhanced learning experiences including those that optimize the potential of mobile devices.

2.3 Mobile Devices as Recruitment Tools and Learning Facilitators

Despite various positive outcomes mentioned in the literature about mobile devices and their utility several obstacles exist with offering a mobile device as a recruitment strategy in the post-secondary setting. Most significantly, most students already own various digital devices (Benham et al., 2014).

The literature further indicates that instructor adoption is a major barrier to the integration of digital tools within the classroom. Instructors may be reluctant to use digital pedagogical tools for diverse reasons (Barry, Murphy, & Drew, 2015; Benham et al., 2014; Greener, & MacLean 2013). Some instructors may worry that students will use the technology for non-course related activities such as chatting, Facebook, gaming, and general internet surfing (Barry et al., 2015; Mullen, 2014). As various studies reveal, when a lecture is not engaging, students are likely to use technology for non-course related activities.

At the same time, according to some learning experts, it may not be the digital device that is the problem but rather the structure or design of the curriculum. Barry et al. (2015) recommend redesigning a curriculum so that there is thoughtful use of technology in the classroom. Doing so involves consideration of how students want to see technology used (Benham et al., 2014; Greener et al., 2013). Instructors also need to adopt a technology enthusiastically: after all, they are the persons who will be implementing it into the classroom. Anything less than a positive disposition and some fundamental skills in how to use the technology to support learning are serious disadvantages.

2.4 Instructor Perceptions of the iPad

Lane and Stagg's (2014) study revealed that instructor intention and attitude toward using iPads in the classroom were positively correlated with how compatible the iPad is with the instructor's work, the instructor's perception of the usefulness of the iPad, and the instructor's perception of the ease of use of the iPad. In a study reported by Lane et al. (2014), most instructors felt that the iPad was compatible with their work. Other instructors have reported that they would be willing to make changes to their practices if they were using an iPad in their classrooms (MacLeod, 2015). Doing this, however, requires time to learn the new technology and prepare materials which, when time is not provided, could deter instructors from adopting the technology (Roberts, 2008). Instructors have also found iPads to be most useful when each student has an iPad (Vu et al., 2014; Wardley, & Mang, 2015). When this is the approach, the instructor and students can help and support each other if problems arise with the technology, thus reducing the learning curve of iPad technology in the classroom. Roberts' (2008) framework suggests that a barrier to instructor adoption is the instructor`s fear that students will be more proficient with the technology than the instructor is.

2.5 Administrative Support and Instructor Adoption

A major factor affecting whether instructors implement tablets and other technologies in the classroom is the issue of administrative support (Roberts, 2008). Regarding educational technology policies, Benham et al. (2014) state that instructors must be actively engaged in the creation of policies. Such involvement, in turn, empowers instructors to implement policies. As well, through instructor involvement in policy development, administration will receive firsthand feedback about what is needed to ensure the success of the policy. Roberts (2008) states that lack of instructor involvement in selection and implementation processes inhibit successful adoption of new educational technologies.

When Drouin et al. (2013) implemented iPads in the classroom, two Apple trainers assisted with the integration of this new technology into their classrooms. The trainers offered sessions on basic functions and applications targeting productivity. Following these initial sessions, instructors were required to attend three large group meetings and three to four small group meetings. The topics for the large group meetings were based on the instructors' interests as captured in a bi-weekly survey. This strategy enabled support for the specific difficulties the instructors were experiencing. In contrast with this model of training and continuous support, Roberts (2008) lists factors that inhibit instructor adoption:

- Lack of leadership to support the transition,
- A culture strongly rooted in traditional delivery formats such as lecture,
- Lack of recognition or interest from colleagues or other in position of authority,
- Lack of willingness to share best practices,
- Lack of incentive to adopt or become proficient with new technology,
- Institutional policies which limit experimentation with alternative approaches to teaching,
- Excessively bureaucratic processes for obtaining approval, support, or resources,
- Quality assessment procedures which encourage conformity and inhibit risk taking,
- Lack of faculty involvement in the selection and implementation process, and
- Lack of adequate infrastructure to support the technology. (p.6)

2.6 The Culture of Technology in the Classroom

Drouin et al. (2013) state that universities must foster a culture of technology in the classroom if the goal is increased uptake of technology for teaching and learning. A culture grounded in traditional teaching methods will hinder the success of educational technology in the classroom (Roberts, 2008). In their study, Drouin et al. (2013) suggest two methods for fostering a culture of using tablets in the classroom: a web-based library of information and in-person demonstrations, roundtable discussions, and workshops. These strategies enable instructors to collaborate and share their experiences and reduce instructors' learning curve. Further, instructors can support one another and experience mentorship if the context is appropriately structured. This approach is consistent with Roberts' (2008) framework which indicates that sharing of practices is an important way of increasing adoption. Technological support is critical to fostering a culture of technology in the classroom (Lane et al., 2014).

3. The Study

3.1 The iLearn iPad Program

Called the iLearn iPad Program, this program was introduced to a School of Business at a small undergraduate university in Ontario, Canada. The goals of the program were to increase enrollment in the program and to enhance learning. As part of the iLearn program, every first-year student enrolled in the business program received an iPad during the first week of school. While the iPad was technically on loan to the student, upon graduation from the Bachelor of Business Administration or Bachelor of Commerce program, the student was given the iPad. Professors were expected to use the tablets in class. For students who did not meet the criteria for the program (e.g., students who were taking a business elective but were not a business program or students enrolled before 2012), iPads could be borrowed from a mobile iPad cart for in-class work.

3.2 Sample

Data collection occurred over an eight-week timeframe during the third year of the program. A link to an online survey was provided to a purposive sample of all undergraduate students in the business courses. Students could access the survey through their iPads, other mobile devices, and personal computers. The survey captured relevant demographic information and included closed and open-ended questions focused on the students' use and perceptions of the iPads.

Prior to circulation of the survey, professors teaching in the iLearn program were contacted and asked if a Research Assistant could visit their classes to explain the study and provide the link to the survey. The number of actual participants (n=153) represented 96% of those students who participated in the information sessions. The sample was reduced to 136 after incomplete surveys were removed. While students provided information regarding gender, age, and area of study, there were no personal identifiers in the questions.

Demographics. Differences existed in the students' areas of study with 26 students (19%) pursuing concentrations outside of business. Forty-four percent of participants reported being in the 17 to 20 age group; 49% in the 21 to 25 age group; and 7% in the 26 and older age group. Based on this information, 93% of participants were millennials (Tanaka et al., 2012).

Twenty-nine percent of participants were in their 1st year of study; 39% were in their 2nd or 3rd year of study; 29% had been studying for 4 to 5 years; and 3% had been studying for 6 or more years. A greater percentage of females (59%) than males (41%) participated in the study. The percentage of students who were given iPads through the program (71%) was greater than the percentage of students who accessed iPads through the in-class carts (29%).

Information about how the students had learned about the iPad program and if they had heard about it before attending the university are included in Table 1. Regarding the latter, most participants had not heard about the iPad program before they started their courses in the School of Business (54%). Those familiar with the program before they started their studies had learned about it through recruiters (19%) and the university website (11%).

Table 1. Where students had learned about the iPad program

		Frequency	**Percent %**
Heard about the program from	University Website	15	11%
	Recruiter	26	19%
	Campus Visit	12	9%
	University Fair	5	4%
	N/A*	77	57%
Total		136	100.0%
Heard before attending	Yes	61	45%
	No	73	54%
Total		136	100.0%

* Either did not hear about program before attending or heard from a source not listed

3.3 Data Analysis

Analysis occurred in three ways. First, descriptive statistics were generated to represent frequency of iPad use and how the students used their iPads. Recurring ideas found in the open-ended responses about specific limitations of iPad technology were then collated. Finally, the open-ended responses were examined through content analysis techniques which led to identification of themes. Supportive passages were extracted in relation to the themes.

4. Results

The findings reported here fall into three main categories: (i) frequency of use and how the students used their iPads, (ii) limitations of iPads, and (iii) eight themes pertaining to the use of the iPad to support learning.

4.1 Frequency and Use

Findings pertaining to frequency and iPad use were based on responses to several items that used a five-point Likert-type scale (1 meaning Always, 5 meaning Not at all). Table 2 displays means and standard deviations from four survey questions pertaining to frequency of use. Asked if they used the iPad in their classes for course work, the students' responses were almost evenly split: 49.6% of students chose always to sometimes using their iPads in class while 50.4% chose not using it at all (Table 3). When asked if they were using the iPad for off-task use, 61.8 % reported always to sometimes while 38.2% reported that they did not (Table 4).

Students also varied in how they used their iPads outside of class, with 28.7% using the iPad outside of class for course-related work always or often; 29.2% using it sometimes; and 41.9% not using the iPad outside of class at all (Table 5). Fifty percent reported always or often to using their iPads for functions outside of class not related to their courses; 22.8% reported sometimes while 27.2% reported not using the tablets at all (Table 6).

Table 2. Frequency of use statistics

		How often do you use an iPad for course related purposes in your classes?	How often do you use an iPad for purposes not related to course content in your classes?	How often do you use an iPad outside of class for course related work?	How often do you use an iPad outside of class for functions not related to your courses?
N	Valid	135	136	136	136
	Missing	1	0	0	0
Mean		4.0593	3.6544	3.8897	3.1912
Std. Deviation		1.19553	1.40042	1.26299	1.50316

Table 3. How often do you use an iPad for course related purposes in your classes?

		Frequency	Valid Percent	Cumulative Percent
Valid	A. Always	6	4.4	4.4
	B. Usually	14	10.4	14.8
	C. Often	14	10.4	25.2
	D. Sometimes	33	24.4	49.6
	E. Not at all	68	50.4	100.0
	Total	135	100.0	
Missing	System	1		
Total		136		

Table 4. How often do you use an iPad for purposes not related to course content in your classes?

		Frequency	Valid Percent	Cumulative Percent
Valid	A. Always	17	12.5	12.5
	B. Usually	14	10.3	22.8
	C. Often	20	14.7	37.5
	D. Sometimes	33	24.3	61.8
	E. Not at all	52	38.2	100.0
	Total	136	100.0	

Table 5. How often do you use an iPad outside of class for course related work?

		Frequency	Valid Percent	Cumulative Percent
Valid	A. Always	11	8.1	8.1
	B. Usually	11	8.1	16.2
	C. Often	17	12.5	28.7
	D. Sometimes	40	29.4	58.1
	E. Not at all	57	41.9	100.0
	Total	136	100.0	

Table 6. How often do you use an iPad outside of class for functions not related to your courses?

		Frequency	Valid Percent	Cumulative Percent
Valid	A. Always	26	19.1	19.1
	B. Usually	27	19.9	39.0
	C. Often	15	11.0	50.0
	D. Sometimes	31	22.8	72.8
	E. Not at all	37	27.2	100.0
	Total	136	100.0	

Limitations of iPads

Students' perceptions of the limitations of iPads were discerned through analysis of the open-ended questions. These findings as well as relevant evidence including general information about the student-respondent are summarized here.

The students spoke strongly about the need for compatibility, highlighting how important it is to be able to connect and transfer content from the iPad to other devices:

[The tablet needs] to be compatible with my laptop. I have a Toshiba and an iPad doesn't allow me to transfer files over, whereas if I had a Mac it would [allow me to transfer files over]. (Male, 17 to 21 years old, Business Administration, 1st year of study)

Capability was raised as an issue when the students discussed how they used various apps, programs including Microsoft Office (Word, Excel, and PowerPoint), and the institution's learning management system for their school work:

The tablet would have to […] have mandatory document processors (word, presenter, excel, etc.) to help in my studies. It would also need a physical keyboard, as the touchscreen keyboards are not useful, in my opinion. (Female, 17 to 20 years old, Fine Arts, 2 or 3 years of study)

The students expressed interest in specific brands of tablets. While many students mentioned their loyalty to Apple products, others expressed a contrary viewpoint.

Some students remarked on the cost of the iPad relative to other tablets while other students suggested that the price was reasonable. Many respondents suggested that the quality of a device is more important than the cost of it.

The students described using the iPad for reasons other than school work, "I find myself using my iPad solely for personal use rather than school use and only outside of class" (Male, 21 to 25 years old, BBA Accounting, 2 or 3 years of study). This finding is congruent with the frequency information reported earlier (Table 6) regarding out of class use.

4.2 Themes

As noted earlier, eight themes pertaining to the use of iPads in the classroom and their value as a recruitment strategy emerged. The themes are as follows: ineffective integration of technology by instructors, enhanced learning, time commitment, technology as distraction, the technology marketplace and personal preference, technology and place, functionality, and authentic need versus 'bells and whistles.'

Ineffective Integration of Technology by Instructors. This theme is grounded in the students' perceptions of their professors' use of the iPad in the classroom. Many students indicated that there was very little to no use of the iPad: some professors did not like the technology while others did they know how to use it. Other students described how some instructors did not change their teaching methodologies to include or integrate the iPads. One student reported the following:

I feel like it's a very useful device in the classroom, but I don't think teachers and professors have altered their teaching methods to supports or include the iPads in the classroom. (Male, 17 to 20 years old, BBA Human Resources, 2 or 3 years of study)

Another student offered this comment:

I think that the [iPad] could be beneficial for learning if the program was implemented more effectively by the staff. (Female, 21 to 25 years old, BBA Accounting, 2 or 3 years of study)

These statements are in line with the finding reported earlier that 50.4% of students were not using the tablets in their classes (Table 3).

Enhanced Learning. Contrary to their observations about instructors` skill in using the iPad effectively, most students reported that the iPad was helpful in class and that it enhanced their learning. They described using the iPad to answer surveys, take tests, conduct internet searches, and access textbooks, and how these activities led to increased understanding of course concepts. They remarked that the iPads were most useful when everyone had one and when it was used as a supplementary rather than a primary tool for learning.

Time Commitment. The students commented that the iPad takes more time to use in-class than other technologies. Two reasons suggested for this were the iPad's lack of a physical keyboard and users' unfamiliarity with the technology itself. According to one student, "if some people in the class are unfamiliar or struggling, this wastes time and slows down the class" (Female, 17 to 20 years old, BBA Marketing, 1st year of study).

Technology as Distraction. The students commented that in-class use of the iPad was distracting and prevented active learning. Alternately, they described using the iPad to access social media, play games, watch videos, send email, and iMessage friends. In short, the students reported being off-task during class time because of the iPad: "[I]n many instances the use of social media, games, and other apps [on the iPad] prevent learning and active engagement [in the classroom]" (Female, 17 to 20 years old, Fine Arts, 2 or 3 years of study).

The Technology Marketplace and Personal Preference. In general, the students expressed a distinct preference for other devices over the iPad. They remarked that using a laptop was superior to using an iPad for reasons including the iPad's lack of a physical keyboard, lack of functionality to support programs such as Microsoft Office, and eyestrain due to a small screen.

Technology and Place. The students were clear about their preferences to use their iPads at home as opposed to in the classroom. Some students reported using the iPad at home for school work while others identified using the iPad

for personal use. These ideas are supported by the responses noted for use of tablets outside of class in Tables 5 and 6.

Functionality. The students agreed that the iPad was easy to use and convenient to bring to class. They also discussed, as identified previously, the importance of its compatibility with their other devices. They commented on the fact that the iPad is lighter than a laptop, "The iPad is light-weight and easy to navigate through course materials. It helps to follow along with the professor's lectures" (Female, 21 to 25, BBA Accounting, 4 or 5 years of study).

Authentic Need Versus 'Bells and Whistles.' This final theme emerged from the students' perceptive that iPads are not necessary in the classroom. The students' overall position was that the iPads did not add value to their learning since most of their professors did not make use of them. Additionally, the laptop over the iPad was the students' clear preference, "I feel that iPads aren't needed if you already own a laptop. I can see it being a very valuable tool if you could not afford a laptop. Otherwise having both an iPad and a laptop is unnecessary" (Male, 21 to 25, Business Administration, 2 or 3 years of study).

5. Discussion

5.1 Millennial Students' Insights and Preferences

The idea of getting the mix of technology and learning right is likely related to millennials' experience with and expectations regarding technology. The ways by which the iPad technology was being used by the participants was interesting since 93% of the participants belonged to the millennial or "tech savvy" generation. In the open-ended responses, a small group of students described the iPads as unnecessary because they had other devices; this finding supports the research that laptops and mobile phones are the preferred devices among this demographic (Robert, & Rees, 2014). While most of the participants were using the iPads for personal use (72.8%), their comfort with the technology was not being transferred to the classroom setting. Only 25% of the students were regularly using the iPad in the classroom for course-related work and, when they were in class, 61.8% were frequently or sometimes finding the iPads distracting. According to the students, some of this distraction was due to faculty not effectively integrating the technology in the classroom. These findings are consistent with the literature that instructor adoption is a common difficulty with digital pedagogical tools (Barry, Murphy, & Drew, 2015; Benham et al., 2014; Greener, & MacLean 2013).

Unsuccessful integration may have also affected how the iPads were used outside of class: only 28.7% reported that they frequently used the iPad outside of the class for course related work. With so many students using the iPad in their personal lives, the lack of carryover to course-related work seems to tie with a frustration with how the iPads were used for course content rather than a fundamental dislike for the technology.

Mobile Devices as Recruitment Tools. If a device is a means for recruiting students to a college or university, promotion of the device and the program is essential. Based on this study's findings, the merit of using the iPad as a recruiting tool is unclear. While some students expressed a desire to use mobile devices and expressed preference for the Apple brand over other brands because of its compatibility with other devices, less than half of the students had heard about the iLearn iPad program before attending the institution. Simply stated, the students' preference for the iPad was not effectively utilized and represents a missed opportunity for the university. As suggested earlier, many students did not hear about the program through standard recruitment activities such as a campus visit or the university fair. If students did learn about the program, it appears to have been through an off-campus recruitment strategy and/or their own efforts in researching the university website. The university states on its website that most students who travel to the university for an onsite visit enroll in the university. The university's failure to promote the program while students were on-site is a particular shortcoming.

Administrative Support and Instructor Adoption. The findings reveal that instructor adoption is crucial to the success of a technology-grounded program. When instructors lack sufficient administrative support, many will not incorporate technology into their classrooms. Barry et al. (2015) point out that students will disengage from lectures that do not inspire or motivate them. Although the plan to implement iPad technology into the classroom may have been timely, there were issues pertaining to the rollout as well as technological and pedagogical supports. Further, as the study revealed, the students were impatient given the learning curve of some instructors.

As Robert (2008) and Benham et al. (2014) suggest that to increase instructor adoption, the pedagogical uses of iPad technology need to be well understood while comprehensive administrative support including training and coaching is required. Instructors also need ways to provide feedback to administration, collaborate with other instructors, and receive timely technological support.

6. Limitations

There were several limitations to this study. First, the study included 136 students or 45% of the student population in the School of Business. Although this is a reasonable participation rate based on the number of students involved in the iPad program at the time, some students did not provide comments to the open-ended questions. The comments, when provided, were particularly insightful.

In addition, neither the instructors' perceptions of their use of iPads nor their perceptions of administrative support were explored. The students were not asked about their expectations for how the iPads could be used in the classroom.

6.1 Future Research

Future studies could explore whether students prefer laptops over iPads when there is appropriate use of them in the classroom. Specific applications facilitated by the iPad could also be explored. Examples of these applications include note taking, completing surveys and polls, running simulations, viewing diagrams, viewing PowerPoint slides and notes, and so forth.

Since instructors' perspectives were not gathered in the study, their views could also be explored. Areas for consideration include the association between administrative supports and uptake. General and specific learning strategies that enable engagement in the classroom could likewise be investigated.

Since the iLearn iPad Program was conceptualized to increase enrolments in the university's Bachelor of Business Administration and Bachelor of Commerce programs, further study of whether offering an iPad or an alternate mobile device as an incentive encourages students to attend one university over another is suggested. Marketing methods for informing prospective students of this type of program could also be studied.

7. Conclusion

The purpose of this study was to explore students' perspectives of in-class use of iPad technology; to determine if this technology motivates learning engagement; and to identify factors that motivate the use of this technology in university studies. In the overall, the students expressed a positive view of the iPad in the classroom with many of them indicating that it enhanced their learning. In addition, according to the study, successful use of the iPad as a pedagogical tool requires that several conditions are met. These conditions include the following: 1) students have the hardware, software, and other digital materials (digital textbooks, apps, etc.) required for the course; 2) students are comfortable using the technology and participating in the tutorials available to them; 3) instructors ensure that all students have their own iPads and that no student is required to use an iPad from a loaner cart; and 4) students are confident that the iPad improves or maintains the quality of their contributions in the classroom.

At the same time, the students in this study were dissatisfied with the fact that their instructors did not use the technology more effectively than they did. These results suggest that more administrative and pedagogical support is needed to enable better integration of this technology within the classroom. Lastly, the students identified the importance of digital devices that perform the work functions they need and that are compatible with the devices they already own. Finally, universities using recruitment strategies such as free mobile devices need to be strategic in how they share this information with prospective students.

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