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# **R06. Gender Difference in the Knowledge and Adoption of Educational Technology by Faculty: The Case of a Business School in Jamaica**

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## ***Abstract***

This paper seeks to inform our understanding of the role played by gender in the process of educational technology adoption in a business school in Jamaica. Gender difference studies in educational research are becoming popular but there are few studies in this domain in higher education, especially with respect to faculty. The research examines the expertise of faculty in educational technologies, as well as their adoption and non-adoption in using these technologies in teaching and learning. The study found that males accounted for 62% of faculty exhibiting high levels of expertise in educational technologies in comparison to 38% for the females. The level of adoption for males was statistically higher than females. In addition, the main enhancer was found to be “educational technologies have the potential to enhance teaching and learning” and the main barriers, “there is no reward from administration for using educational technologies in teaching”. The study reinforces the need for further research to assist with the formulation and implementation of the national policy on using educational technologies to enhance teaching and learning in Jamaica.

## ***Keywords***

Business School, Educational Technology, Faculty, Gender, Jamaica

## **1. Introduction**

Despite the pervasiveness of information and communication technology (ICT), ICT adoption in tertiary institutions remains invariably low (Buabeng-Andoh, 2012; Cox, Preston and Cox, 1999). This predicament persists amidst the important role of ICT in teaching and learning which is evidenced by the high investment in ICT by many institutions in an effort to improve the delivery of education. This problem is exacerbated with the discovery that female faculty use less ICT in the teaching and learning process than their male colleagues (Buabeng-Andoh, 2012; Campbell and Varnhagen, 2002; Zhou and Xu, 2007). It is said that this is due to females limited technology access, skill and interest (Volman and van Eck, 2001). This low adoption can negatively impact the effectiveness of the teaching and learning process, as scholars believe that ICT in the form of educational technologies can be an effective tool in supporting the transformation of students in the education industry

(Hennessy, Harrison and Wamakote, 2010). Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources (Januszewski and Molenda, 2008).

It is believed that the use of educational technologies in teaching can benefit both faculty members and students (Hennessy et al., 2010). Most faculty perceive technology as being very useful by providing content characteristics, being enjoyable and contributing to making teaching and learning easier (Buabeng-Andoh, 2012; Hennessy et al., 2010). It is felt that faculty members who use technology in their classrooms, usually demonstrate high levels of energy, are hardworking and perseverant (Hennessy et al., 2010). Research have shown that educational technology can facilitate the learning process in large classes (Hennessy et al., 2010), a condition that is prevalent in many tertiary institutions in developing countries which include Jamaica. Likewise, some of the arguments in support of students admiration of education technologies include; its ability to kindle students' interest and learning in the subject and also its ability to motivate and allow for diversity while supporting productive learning (Cox, Preston and Cox, 1999).

However, it is widely believed that technology has traditionally played a gender role in western society. In general, the design of software and the language of computing have traditionally reflected a bias towards male culture (Campbell and Varnhagen, 2002). However, there is a growing demand on university professors – of all genders - to use educational technologies in teaching due to increased course loads, large class sizes, greater research and publication requirements and more university service commitments (Spotts, Bowman and Mertz, 1997). But as faculty begin to use more educational technologies in the teaching and learning process, it is important to understand the various approaches taken by males and females, so that the process may be better facilitated (Campbell and Varnhagen, 2002).

There have been studies regarding the inclusion of technology in education (Cox et al., 1999), but most of these studies are inconclusive (Campbell and Varnhagen, 2002). Furthermore, only a few studies have addressed the gender differences relating to faculty adoption and use of educational technologies in higher education (Spotts et al., 1997), with far less studies in Jamaica. Hence, this study seeks to inform our understanding of the role played by gender in the process of educational technology adoption in a business school in Jamaica. Specifically, the purpose of this study is to assess the level of knowledge and adoption of educational technologies in teaching by faculty, as well as to ascertain the enhancers and barriers of technology adoption in teaching. As a result, our research questions are:

1. Are male faculty members more knowledgeable about education technologies than their female colleagues?
2. Do male faculty members use more educational technologies in teaching than their female colleagues?
3. What are the main enhancers to the use of educational technologies in teaching?
4. What are the main barriers to the use of educational technologies in teaching?

This study aims to provide insights which can assist with the formulation of the teaching and learning policy decisions going forward in Jamaica, especially since the business school being studied was only recently established. An important characteristic of this study is that it is conducted in a country which is challenged by the barriers in the adoption and use of educational technologies in the classroom which are outlined within the literature. These

barriers include faculty attitude and motivation towards technology, stress, anxiety, access to computers (Campbell and Varnhagen, 2002). The literature also posit that the effective adoption and use of educational technologies in institutions is greatly dependent upon the availability and accessibility to resources such as hardware, software and communication infrastructure (Hennessy et al., 2010). These resources are scarce in low-income countries (Hennessy et al., 2010), with Jamaica being no exception.

The problem is compounded with the fact that Jamaica is ranked at 85<sup>th</sup> out of 144 countries in the world in terms of network readiness index (Bilbao-Osorio, Dutta and Lanvin, 2013). The network readiness index is a measure that seeks to evaluate the degree of a society's preparedness and readiness to take advantage of their ICT infrastructure (Dutta, Bilbao-Osorio and Geiger, 2012). From this result it is safe to say that individuals of this society are not readily prepared to take advantage of the benefits of ICT usage. It is with this in mind that it is felt that faculty members need to be supported to get the most from using technology in the classroom, especially where resources are limited (Hennessy et al., 2010).

The expected contribution of this study is to assist policy makers in the formulation and implementation of national and institutional policies on technology use to enhance teaching and learning in Jamaica. The rest of the paper is organized as follows: A review of the relevant literature on educational technology adoption is presented in the next section, followed by the methodology. This is followed by the presentation of our findings and discussion, and finally a conclusion is offered.

## **2. Literature Review**

Information communication and technology (ICT) integration has brought remarkable changes to society in the 21<sup>st</sup> century (Buabeng-Andoh, 2012). ICT integration in this study is described as the means of using any ICT tool (i.e. Internet, e-learning technologies, jump drives, etc.) to assist teaching and learning (Williams, 2003). ICT has been changing many aspects of higher education in areas such as administration and the method of teaching and learning (Zhou and Xu, 2007). More specifically, ICT in the form of educational technologies is being demanded and are playing an increasingly important role in tertiary education (Campbell and Varnhagen, 2002). It is strongly believed that educational technologies have the potential to assist tertiary faculty members address the increasing demands on their time, knowledge and energy (Spotts et al., 1997). As a result, today's educational institutions are restructuring their educational curricula and lecture room facilities in an attempt to bridge the existing technology gap between the educational sector and the business sector (Leidner and Jarvenpaa, 1995), reduce the load of faculty and enhance classroom delivery. This is evident in the huge amount of expenditure on ICT to improve teaching and learning. For example, the US government spent \$4.7 billion in higher education in 2009 and the UK government spent £2.5 billion in the same year (Nut, 2010).

Despite the huge investment in ICT infrastructure, equipment and faculty professional development to improve education and the learning process, there still remains low adoption and use of education technologies in teaching and learning (Gulbahar, 2007). This has caused the education sector to lag behind the business sector in terms of ICT adoption (Leidner and Jarvenpaa, 1995), which can place tertiary graduates at a disadvantage in the world of work. The necessary restructuring of the educational process requires effective adoption of educational technologies into the prevailing environment in an attempt to promote meaningful learning, as well as promote faculty productivity (Tomei, 2005). But to successfully adopt and implement educational technology in institutions depends largely on

the attitude of faculty and the support given by the institution (Buabeng-Andoh, 2012). Adoption in this study is defined as the decision of an individual to make use of an innovation as the best course of action available (Rogers, 2003).

There is evidence that differences exist in how males and females approach, perceive and implement educational technologies (Campbell and Varnhagen, 2002), and this has been manifested in research findings in which men and women use technology differently at the workplace and in tertiary institutions (Parry and Wharton, 1995). Based on this perceived difference, academic structures tend to view men as producers of knowledge (researchers) while women are seen as conduits or teachers (Campbell and Varnhagen, 2002). It is posited by Park (1996) that historically women spent more of their time on activities relating to teaching than on research activities. Although females spend more time on teaching than research, they are still not spending enough time on ways to incorporate educational technologies in the teaching and learning experience.

Studies have shown that female faculty members are integrating educational technologies into their teaching less than their male colleagues (Jamieson-Proctor, Burnett, Finger and Watson, 2006). However, in another study, although in a basic school, it was found that female teachers applied educational technologies more than the male teachers (Breisser, 2006). In contrast, research exists which suggest that gender differences are minimal (Fife-Schaw, Breakwell, Lee and Spencer, 1987). In fact, Anduwa-Ogiegbaen and Isah (2005) did not find any significant difference between male and female faculty in their usage of the Internet and Gerlich (2005) also found that gender played a minor role in faculty perceptions of teaching online.

Despite the conflicting findings regarding male and female adoption and use of educational technologies, it was discovered by Cox et al. (1999) that the most important factors highlighted by tertiary faculty members in their teaching are:

- Making the lessons more interesting
- Making the lessons easier
- More fun for faculty and students
- More diversity
- More motivating
- More enjoyable
- Improving presentation of teaching materials
- Giving the faculty more prestige
- Making faculty administration more efficient

Although it is reported that the gender gap has reduced in recent years (Yukselturk and Bulut, 2009), gender differences still attract attention in today's educational research (Voyer and Voyer, 2014). But very few studies examine the gender differences in the use of educational technologies at the tertiary level (Zhou and Xu, 2007), and more so among faculty within a business school in Jamaica.

It is widely accepted that there is low uptake of educational technology in many developing countries and this trend is expected to continue unless concerns such as Internet connectivity and bandwidth, quality teacher training and respect for teachers are addressed (Wright, 2014). In response to some of these concerns, the Jamaican government allocated \$1.2 billion in the 2014/15 fiscal year to continue its E-Learning Project. In addition, the government also

embarked upon a 'Tablet for School' project in which a total of 25,000 tablets were distributed to teachers and students in 38 educational institutions island wide. This project is collaboration between the Ministry of Education and the Ministry of Science, Technology, Energy and Mining. According to the Minister of State in the Ministry of Science and Technology, the project is expected to enhance and strengthen the culture of entrepreneurship and innovation among Jamaican students. It is believed that technology will encourage students to experiment, think outside the box, be creative and come up with solutions which can enhance a culture of entrepreneurship and innovation (Robinson, 2014). Although these investments and projects are geared primarily at secondary schools, there is growing awareness and interest being shown across the country whether secondary or tertiary institutions regarding e-learning and educational tools.

The institution being studied evolved into a tertiary institution with over 47,000 registered students from over 40 countries, supported by 16 countries in the English-speaking Caribbean. The institute graduates about 9,000 students annually. The business school within the university was established recently. It evolved from the merger of two departments within the university. The business school has an enrolment of over 2,500 students (both undergraduate and graduate students). Thirty-six percent (36%) of the total school enrolment are male with the remaining 64% being females. The teaching and learning within the school is facilitated by ninety-seven (97) faculty members (both full-time and part-time), with the majority being female faculty. The motivation to study this business school in Jamaica is based on the fact that the merger is recent, and one of the main objectives of the merger is to provide more flexible options to effectively engage with students.

### **3. Methodology**

The targeted survey respondents were full-time and part-time lecturers at the institution's business school. The survey instrument was pilot tested with seven lecturers at the university in which the focus was to assess face validity. An online survey approach was taken. The instrument was emailed to 72 lecturers but only 40 were completed, giving a 55% response rate. The survey instrument had thirty-five questions which included demographic data and the survey items. Thirty-one items were scaled questions and the last question was open-ended. A Likert scale anchored on 1 being strongly disagreed and 7 being strongly agreed were used to assess respondents' perception on the different categories being measured. These categories included expertise in educational technology, adoption of educational technology in teaching, motivators for the use of educational technology and barriers to the use of educational technology in teaching.

The demographic profile showed that 45% of the respondents were female while 55% were male. The vast majority of respondents (62%) were full-time staff 62% while only 38% were part-time staff. An additional breakdown showed that the majority of the sample held the position of lecturer (62.5%). Some 12.5% of the sample was Senior Lecturers while both Assistant Lecturers and Research Assistants each held a meager 7.5% of the population. The final 10% of the sample was equally split between Instructors and Tutors. An examination of the sample by age group showed that the majority of the respondents were between the ages of 50 to 59 years old (42.5%). Some 27.5% of the sample was between the ages of 30 to 39 years while 17.5% were between 40 to 49 years old. It was reported that 10% of respondents were less than 29 years while 2.5% of respondents were older than 60 years old.

## 4. Findings and Discussion

### 4.1 Reliability

Reliability analysis which is concerned with the consistency of a measure in repeated observations (Babbie, 2010), was conducted on the survey items. Cronbach alpha was chosen as the measure to test the survey items for reliability due to its popularity. Our tests revealed that reliability was established in all items because the cronbach alpha readings were above the 0.7 threshold (Chin, 2010). The reliability readings ranged from 0.733 to 0.885, as shown in Appendix A, B and C, with the survey item “I consistently use educational technology in my teaching” having the lowest reading, and “I am knowledgeable at using online tutorials in my teaching” having the highest reading.

### 4.2 Expertise in educational technology

From the analysis, it is observed in Figure 1 that the overall level of expertise in educational technologies is high with approximately 53.8% of the business school faculty members exhibiting high levels of expertise. In an attempt to classify the variable as high or low, it was transformed into a dichotomous variable, by finding the median score and any reading below the median is classified as low and those readings above the median are classified as high. Further analysis was conducted on the variable in its continuous form to assess whether difference in gender impacted the level of expertise in educational technologies in the school.

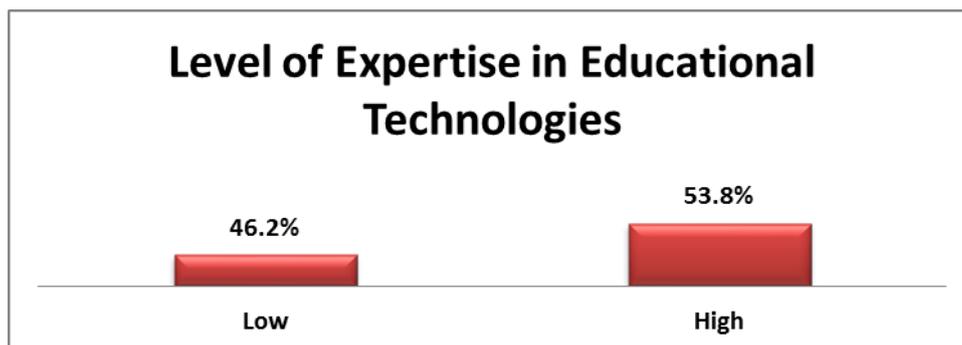


Figure 1: Graph showing the level of expertise in educational technologies in the school

In examining the level of expertise in educational technologies of the sample by gender, it was observed in Figure 2 that 62% of faculty members who exhibited high levels of expertise were male while 38% were female. Of the staff who exhibited low level of expertise, 44% were male while 56% were female.

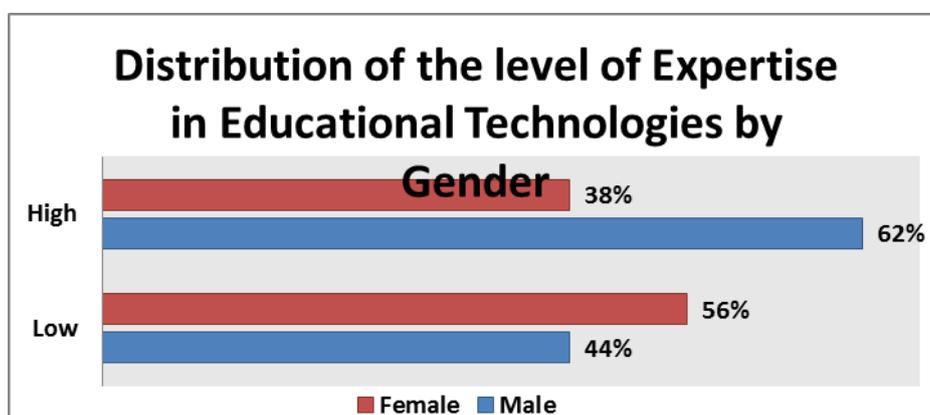


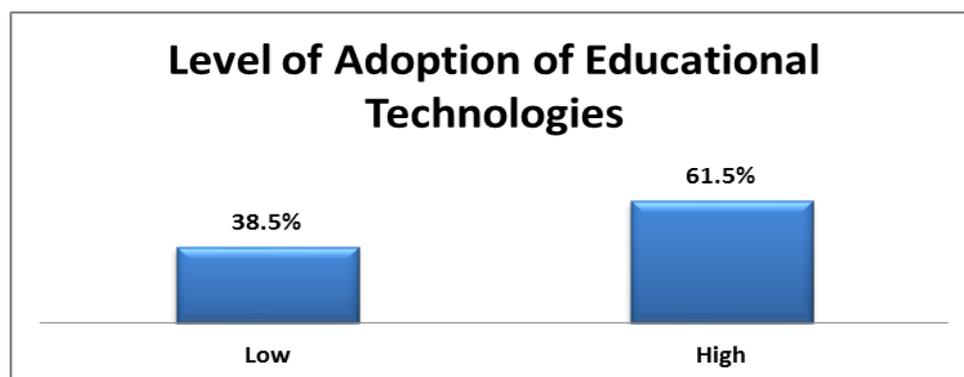
Figure 2: Graph showing the level of expertise in educational technologies by gender

To statistically assess the level of expertise in educational technologies by gender, Mann Whitney U test was employed. From the analysis, it can be concluded that the level of expertise for males (mean rank = 21.57) was not statistically different from females (mean rank = 18.17);  $U = 156$ ,  $p = .282$ ,  $\alpha = 0.05$ .

The finding of male faculty being more knowledgeable about educational technology was expected in this study. But we expected that there would be a statistical difference between male and female faculty, as it is widely believed that the design of software and the language of computing have traditionally reflected a bias towards male culture (Campbell & Varnhagen, 2002). In addition, males have traditionally had better access to technology (Campbell & Varnhagen, 2002). As a result, most studies have discovered that male faculty members are integrating educational technologies into their teaching more than their female colleagues (Jamieson-Proctor et al., 2006).

### 4.3 Adoption of educational technology

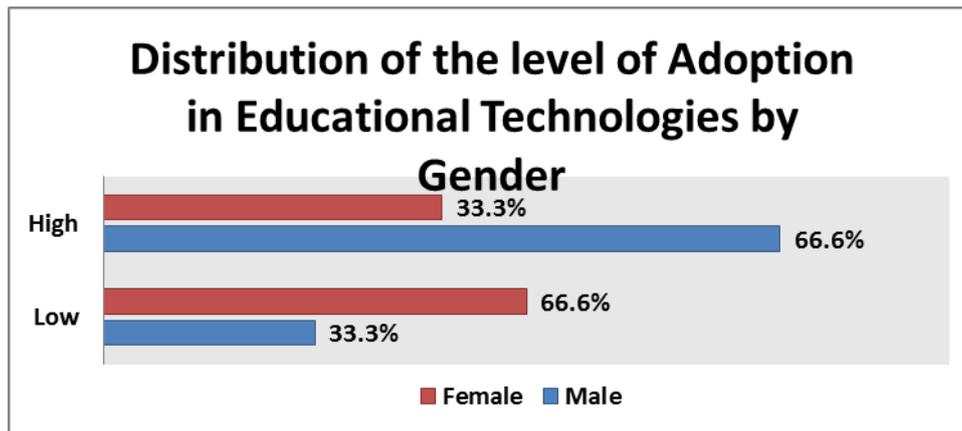
In assessing the adoption and use of educational technologies in teaching it was observed in Figure 3 that the overall level of adoption was high with approximately 61.5% of faculty reporting high levels of adoption. Further analysis was conducted on the variable in its continuous form to assess whether difference in gender impacts the level of adoption in educational technologies in teaching at the school.



**Figure 3:** Graph showing the level of adoption of educational technologies in the school

In examining the level of adoption of educational technologies of the sample by gender it was shown in Figure 4 that 66.6% of the staff who exhibited high levels of adoption were males while 33.3% were females. Of the staff who exhibited low levels of adoption, 33.3% were male while 66.6% were female.

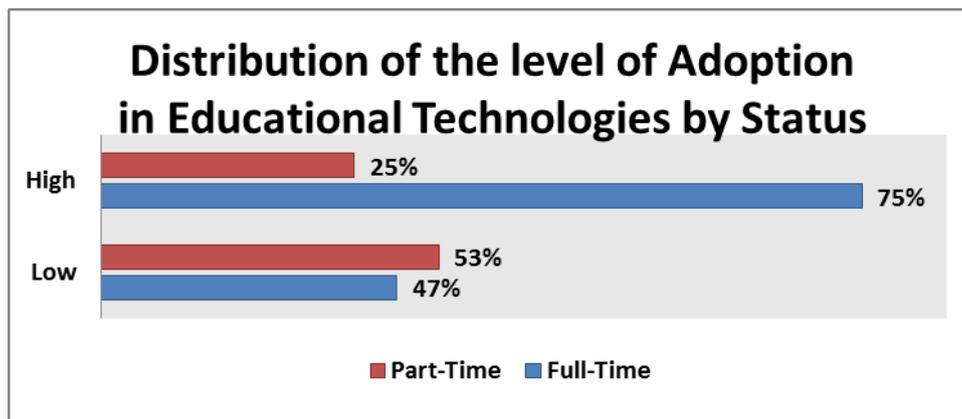
It is claimed that if faculty members believe that the use of ICT will not fulfill their needs or the needs of their students, then most likely they will not integrate ICT in the form of educational technology into their teaching (Buabeng-Andoh, 2012). Hence, it is reasonable to assume that male faculty perceived that these technologies can fulfil the needs of their students in areas such as making the lessons more interesting, making the lessons easier, providing more fun and enjoyment for faculty and students and facilitating more diversity.



**Figure 4:** Graph showing the level of adoption in educational technologies by gender

To assess the level of adoption in educational technologies by gender, Mann Whitney U test was employed. From the analysis, it can be concluded that the level of adoption for males (mean rank = 22.86) was statistically higher than females (mean rank =16.67);  $U = 129, p = .045, \alpha = 0.05$ .

An assessment of the difference in faculty status (full-time or part-time) impacted the level of adoption in educational technologies in teaching at the school was conducted using the independent sample the Mann Whitney U test.



**Figure 5:** Graph showing the level of adoption of educational technologies by status

Graphically it is observed in Figure 5 that of the staff who exhibited high levels of adoption, 75% were male while 25% were female. Of the staff that exhibited low levels of adoption 47% were male and 53% were female.

Based on further analysis, it can be concluded that the level of adoption for full-time (mean rank = 20.42) was not statistically different from part-time (mean rank =19.25);  $U = 129, p = .722, \alpha = 0.05$ .

#### 4.4 Enhancers

In terms of motivators (enhancers) to use educational technologies in teaching, the study found that the top three enhancers as shown in Figure 6 are:

1. Educational technologies have the potential to enhance teaching and learning.
2. Educational technology enables me to make a subject interesting.
3. I don't want to fall behind my colleagues who use educational technology in teaching.

Factor	Mean N = 40	Standard deviation	Rank
Educational technologies have the potential to enhance teaching and learning	6.436	0.882	1
Educational technology enables me to make a subject more interesting	5.872	1.260	2
I don't want to fall behind my colleagues who use educational technology in teaching	5.872	1.380	2
Educational technology provide an environment appealing to different learning styles	5.718	1.255	4
Educational technology enable students to collaborate in learning	5.615	1.426	5
Students expect lecturers to use educational technology in teaching	5.590	1.446	6
I enjoy figuring out how to use ICT in teaching	4.795	1.780	7
The institution policies encourage faculty to use educational technology in teaching	4.718	1.776	8

**Figure 6:** Outlines the motivating factors for using educational technologies in teaching in descending order

These results are not surprising as the literature addresses the notion of these technologies enhancing the teaching and learning process and making the delivery of content interesting (Cox et al., 1999). This belief is in alignment with survey respondent #1 in the General Comments section below who stated, "I believe that educational technology should be the way forward for every type and area of delivery". In addition, it is posited that for faculty to be at the cutting edge of knowledge production and creation, they need to be educated to use ICT effectively and creatively (Hennessy et al., 2010). However, in developing countries most faculty have minimal or no ICT skills training and as a result struggle to take advantage of these technologies (Hennessy et al., 2010).

#### 4.5 Barriers

The barriers to using educational technologies are many (Campbell and Varnhagen, 2002). These barriers are manifested more in female faculty in comparison to male faculty (Campbell and Varnhagen, 2002; Zhou, 2007). The barriers to using educational technologies include attitude, motivation, stress, anxiety and lack of access to computers (Campbell & Varnhagen, 2002). Against this background, we analyzed the barriers to the adoption of educational technologies in teaching and found the top three barriers as shown in Figure 7 to be:

- There is no reward from administration for using educational technologies in teaching
- There is lack of time to develop computer-based instructions
- There is unstable software

The number one ranked barrier came as a surprise because it speaks to rewards being given for the use of technology in teaching. This is in alignment with an external reward being the main motivator to use educational technology instead of being internally driven. Notwithstanding, we had expected the number two ranked barrier to be number one because

the work load of faculty in most cases is high, coupled with large class sizes. These two factors could lead to long hours marking assignments and exams and a heavy demand on faculty time during office hours and other times. This work load is further compounded based on the fact that there are relatively few teaching and research assistant to provide a helping hand to faculty. This expectation is in alignment with one of the respondent in the General Comments section who makes reference to being “constrained fulfilling other duties that there is no time to: (1) learn the technology software and hardware; and (2) learn how to introduce whatever new technology there is in the classroom in a meaningful way”.

Factor	Mean N = 40	Standard Deviation	Rank
There is no reward from administration for using educational technology in teaching	4.154	2.159	1
There is lack of time to develop computer-based instructions	4.128	2.028	2
There is unstable software	3.462	1.790	3
There is a lack of access to hardware	3.333	1.938	4
Not many training opportunities exist for lecturers	3.282	1.877	5
I feel stressed when using educational technologies in teaching	2.487	1.775	6
I get anxious when using educational technologies in teaching	2.333	1.510	7
The available educational technology do not fit the course I teach	2.077	1.345	8

**Figure 7:** Outlines the barriers for using educational technologies in teaching in descending order

#### **4.6 General comments by survey respondents (Exact quotes are presented)**

The last question in the survey instrument was open-ended, in which respondents were asked to make general comments about educational technology in the business school. There were four themes emerging based on the comments made by the respondents to this open-ended survey question. These were:

1. Educational technology is important and useful
2. There was a need for training in the use of educational technologies
3. The use of educational technology create increased anxiety for faculty
4. The inclusion of educational technology in teaching created a resource burden

Firstly, the importance of educational technology in teaching and learning was supported with statements such as, “I believe that educational technology should be the way forward for every type and area of delivery” and “The use of ICT in course delivery is indeed quite useful” Another respondent felt that “The value of educational technology is the opportunity for asynchronous learning that it provides”. In addition, it was felt that it is imperative to adopt and use education technology in a competitive environment “The environment in which we currently operate has no place for an institution that does not value teaching and learning

in tangible ways. This is particularly the case for a business school, which actively competes with institutions both locally (face to face) and internationally (online)”.

Secondly, the need for training and development was highlighted with response like “I am not aware of training opportunities for the development of skills in preparing multimedia presentations using power point presentations & audacity etc”

Thirdly, it is felt that the use of educational technology can create anxiety. This claim is supported by the respondent who said, “I am anxious because one never knows when the technology will fail. I have just talked through the slides when it has happened. It is always a fear at the start of the class though”.

Finally, the claim regarding the adoption of educational technology being a resource burden is presented in the following quotations, “We are so constrained fulfilling other duties that there is no time to: (1) learn the technology software and hardware; and (2) learn how to introduce whatever new technology there is in the classroom in a meaningful way”. Another respondent posited that “The benefits of educational technology are obvious but one has to sacrifice research time to learn the new technologies as they emerge. One had to sacrifice research time to teach properly in the first place. Educational technology is an additional burden”. The final respondent spoke to the issue of constraints being experienced by the business school and stated that “I have had to provide my own hardware and peripherals from my own resources for my teaching. The university did not provide this for me”.

In summary it could be argued that educational technology is believed to be important and useful. However, training seminar in their use should be promoted to reinforce the importance of educational technology in teaching and learning. This by extension could increase the adoption of these technologies and possibly serve to reduce the anxiety in their use. These measures are very important especially in the context of the resource constraints being faced by the business school.

## **5. Conclusion**

It is strongly believed that educational technologies have the potential to assist tertiary faculty members address the increasing demands on their time, knowledge and energy. As a result, today’s educational institutions are restructuring their mode of operation and lecture room facilities in an attempt to bridge the existing technology gap between the educational sector and the business sector, reduce the load of faculty and enhance classroom delivery. This is evident in the huge amount of expenditure on educational technologies in tertiary institutions to improve teaching and learning.

It is believed that there is a narrowing of the gap between male and female faculty members view of technology. But fundamentally, it still remains accepted that males and females view technology differently which influences the use of educational technology in teaching. This study examined the expertise of faculty in educational technologies, as well as their adoption and non-adoption in using these technologies in teaching and learning in the business school. From the study we can conclude the following in the context of a business school in Jamaica:

1. Male faculty members are more knowledgeable about educational technologies than their female colleagues.

2. Male faculty members adopt and use more educational technologies in teaching than their female colleagues.
3. The main enhancer to the use of educational technology is “Educational technologies have the potential to enhance teaching and learning.”
4. The main barrier to the use of education technology is “There is no reward from administration for using educational technology in teaching.”

The study reinforces the need for further research to assist with the formulation and implementation of the national policy on using educational technologies to enhance teaching and learning in Jamaica.

A limitation of the study is the small sample size which negates the generalizability of the findings. However, we intend to conduct a more in-depth study with a larger sample size and taking a more purposive sampling approach in which respondents are selected based on the objectives of the study. In addition, perhaps a self-administered survey approach would be more effective over the online method used in this study.

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## Appendix

<b>Expertise in Educational Technologies</b>	
<b>Survey Item</b>	<b>Cronbach's Alpha</b>
I am skilful at uploading course outlines in the online system	0.868
I am skilful at uploading lecture notes in the online system	0.867
I am skilful at uploading students' grades in the online system	0.884
I am skilful at using presentation packages in my teaching	0.879
I am knowledgeable at doing Web browsing in my teaching	0.876
I am knowledgeable at using youtube clips in my teaching	0.882
I am knowledgeable at using spreadsheet in my teaching	0.879
I am knowledgeable at using online quizzes in my teaching	0.873
I am knowledgeable at using online forums in my teaching	0.870
I am knowledgeable at using online tutorials in my teaching	0.885

**Appendix A:** Survey items – Expertise in educational technologies showing reliability readings.

<b>Adoption of Educational Technologies</b>	
<b>Survey Item</b>	<b>Cronbach's Alpha</b>
I use educational technology to prepare my lecture notes	0.859
I am comfortable with the use of educational technology in teaching	0.776
I consistently use educational technology in my teaching	0.733
I use more educational technology in my teaching than my colleagues	0.820

**Appendix B:** Survey items – Adoption of educational technologies showing reliability readings.

<b>Variable</b>	<b>Cronbach's Alpha</b>	<b>No. of Items</b>
Expertise in educational technologies	0.887	10
Adoption of educational technologies	0.844	4

**Appendix C:** Test statistics of the composite reliability analysis.