BUSINESS EDUCATORS' PERCEPTIONS CONCERNING MOBILE LEARNING (M-LEARNING)

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Abstract

Background: *Accessibility to the wireless Internet and pocket-sized mobile phones have influenced mobile learning heavily. Therefore, it is important to determine how mobile technology can be used in teaching and learning.* **Purpose:** *The purpose of the study was to identify the perceptions of business educators regarding the use of mobile phones in the classroom. The study also determined how mobile devices could be used in teaching and learning in business education courses and programs.* **Method:** *A quantitative, descriptive research design was used to determine the perceptions of 642 business educators regarding mobile phone utilization in teaching and learning. A total of 195 participants completed the survey resulting in a 30.3% response rate.* **Results:** *The respondents 90 respondents (46%) revealed they have used a mobile device for educational purposes. Statistical analyses revealed that associate professors tend to be slightly more accepting of mobile phone use in the classroom than instructors. Some communicate with students using social media such as Facebook, encourage students to work in virtual teams using online conferencing, and provide continuous learning opportunities to the students outside of class.* **Conclusions and Recommendations:** *Business educators still have concerns about mobile phones being a distraction in the classroom. However, some believe that there are beneficial ways in which mobile devices can be used in teaching and learning. More research should be conducted to determine the perceptions of business educators regarding mobile technology classroom use based on gender, age, educational institution, and teaching experience. Also, additional strategies for mobile learning should be identified.*

Introduction

The technological advancements of the last two decades have changed the dynamics of teaching and learning in the 21st Century. Educators are expected to integrate technology in the classroom to meet the needs of today's learners. Because children begin using technology in their primary years, engaging students in the classroom has become more and more difficult (Guthrie & Carlin, 2004). Thus, to connect with this digital generation of learners, educators have embraced e-learning (electronic learning) which has been followed up by embracing m-learning (mobile learning) (Chuang, 2009).

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Purpose of Study

According to the Pew Research Center, 75% of teens have a cell phone (Lenhart, 2009). Since the majority of students own mobile phones, determining how mobile devices can be used in teaching and learning is important (Johnson, Levine, Smith, & Stone, 2010). A review of the literature revealed that there are limited studies that deal with how educators perceive using mobile technologies for instruction. The purpose of the study was to identify the perceptions of business educators regarding the use of mobile phones in the classroom. The study sought to determine how mobile devices can be used in teaching and learning in business education courses and programs.

Research Questions

1. What are the personal and employment demographics of business educators who may use mobile phones for teaching and learning?
2. What are perceptions of business educators regarding the use of mobile phones for teaching and learning?
3. To what extent is mobile phone use in teaching and learning considered a distraction by business educators?
4. What are business educators' suggestions for using mobile devices in teaching and learning?

Limitations

This study shares only the self-reported perceptions of business educators in a single professional honorary business education organization named Delta Pi Epsilon (DPE). Because this study's results are limited to DPE members, the results cannot be generalized to all business educators.

Literature Review

Being "always connected" by way of the wireless Internet and computers led to the emergence of electronic learning (e-learning). Now that computers have become pocket sized, mobile devices have influenced the popularity of mobile learning (m-learning) which involves the use of the wireless Internet and mobile devices including smartphones (Internet-enabled mobile devices), personal digital assistants (PDAs), and laptops (Wang, Wu, & Wang, 2009). A review of current literature was conducted to determine the role of mobile technology in teaching and learning.

Higher Education

Some postsecondary educators have embraced mobile learning by creating podcasts, accessing e-books, and polling students by texting; while it has been repelled by others (Trotter, 2009). In fact, some educators perceive mobile phones

as disruptive technology (Manzo, 2008). According to a study by the National Education Association (Gilroy, 2004), 85% of college professors agreed that mobile phones should be banned from the classroom. Even using mobile phones outside of the classroom has faced opposition. Many educators are concerned whether students should be learning "anywhere and anytime" because of the many distractions they may encounter (Motiwalla, 2007).

According to Moran (2008), faculty are concerned that students are cheating by sending and receiving answers to questions from their peers using mobile phones. Web-based services such as ChaCha, which is designed to facilitate cheating, is also disturbing to educators (Moran, 2008). These types of websites allow users to pose a question via text message. The answer is provided almost instantaneously by "real people." Thus, phones are being collected by professors before a test or exam to deter cheating (Caverly, Ward, & Caverly, 2009).

K-12 Education

While K-12 educators are equally concerned with the aforementioned potential problems that mobile devices can bring to the classroom, inappropriate access and use of mobile devices are of particular concern. A study conducted by the Interactive Educational Systems Design Inc. (IESD) surveyed 500 district technology directors to determine barriers that hinder Web 2.0 technology adoption. Of the directors queried, 55% cited the need to monitor appropriate use of Web content (IESD, 2009). Elementary and secondary school teachers are concerned that students will access unfiltered websites, and/or take unauthorized pictures or movies while in class (Kolb, 2008). In addition, protecting students from online predators is of major concern. Although cyber safety is discussed regarding computer and Internet use in the classroom, smartphones provide students with similar access to the Web, which can be detrimental.

Many K-12 administrators are concerned that mobile phones may be used to threaten the security of their schools and students. Mobile phones can be used to perform illegal activities such as conducting drug deals, communicating bomb threats, and igniting a bomb using a cell phone (Katz, 2005; Kolb, 2008). These acts could seriously undermine the efforts of safety officials and school resource officers in our public schools.

Cyber bullying, using the Internet and mobile phones to bully others through aggressive behavior, is another potential risk. According to a study conducted on 533 secondary students from five different schools, phone calls and text messages were used most prevalently to bully others. (Smith, Mahdavi, Carvalho, Fisher, Russell, & Tippett, 2008). Although the study revealed that cyber bullying occurs less frequently in schools than traditional bullying, some believe that the safety of students far outweighs the benefits of mobile technology.

Methodology

Descriptive research methodology was used in this study to examine perceptions held by business educators concerning the use of mobile phones for teaching and learning. Descriptive research was used to solicit data from the business educators (Kelley, Clark, Brown, & Sitzia, 2003).

Population

The population for this study included 642 active Delta Pi Epsilon (DPE) business educators. Business educators who are members of DPE have the professional knowledge and teaching experience to provide meaningful responses on the research instrument. A message was emailed to all 642 DPE members, which explained the purpose of the research study and provided detailed instructions concerning completing the survey.

Instrumentation

A survey was used to collect data from the population. The M-Learning Integration in Teaching and Learning Survey was adapted from the *Factor Loadings and Descriptive Statistics for Attitudes Toward Mobile Phones Scale* (Campbell, 2004), which was used to identify distractions professors experience when students use mobile phones in the educational environment. The three-part survey instrument was completed by each participant. Part one included questions concerning demographics. In part two of the survey, a 5-point rating scale was used with the response range: 1 = "never used," 2 = "not useful," 3 = "somewhat useful," 4 = "useful," and 5 = "very useful." Part three of the survey has a 5-point rating scale with the following response range: 1 = "strongly disagree," 2 = "disagree," 3 = "no opinion," 4 = "agree," and 5 = "strongly agree."

Pilot Study

A pilot study was conducted using ten business educators who were not members of DPE from universities that have Delta Pi Epsilon chapters in their state to identify ambiguities in the instructions, clarify the wording of questions, and detect omissions or unanticipated answers in the questionnaire. Several participants provided comments after they completed the online survey. The researchers revised the instructions and the online survey to incorporate the changes.

Data Collection

The researchers obtained permission from the Institutional Review Board at their respective universities prior to implementing the research study. The research data were collected using a Web-based survey administered to the participants during the 2010 spring semester. An email message which included a link to the survey was sent to 642 active Delta Pi Epsilon members explaining the study and requesting participation. Four weekly email follow-up messages were sent to

encourage non-respondents to return the survey. Eighty-eight additional surveys were returned as a result of the weekly reminders. A total of 195 out of 642 participants completed the survey resulting in a 30.3 % response rate.

Analysis of Data

Descriptive statistics were used to determine the personal and employment demographics of business educators and their suggestions for using mobile phones in teaching and learning. A Scheff Test was used to determine whether there was a significant difference in perception among business educators regarding mobile phones being a distraction in the classroom based on their rank.

Findings

Major findings from the four research questions are presented in this section.

Research Question One

Research question one sought to determine what the personal and employment demographics reveal about business educators who may potentially use mobile phones for teaching and learning. As outlined in Table 1, the majority of the respondents (78.5%) were female, over 52 years of age (63.5%), and (55.4%) taught in four year education institutions. The category of "other" educational institutions included community colleges, middle schools, and high schools (44.6%). Over half were on tenure track (60%) or were tenured (55.8%). Of the business educators who responded, 30.8% indicated that their educational rank was instructor, 44.6% held master's degrees, and 41% had taught college over 20 years. The category of instructor included adjunct professors, high school teachers, and middle school teachers.

Table 1

Respondents' Demographic Profile

Categories	N	(%)
Gender		
Female	153	78.5
Male	42	21.5
Total	195	100.0
Institution		
4-Year College	108	55.4
Other	87	44.6
Total	195	100.0
Tenure Track		
No	78	40.0
Total	195	100.0

Table 1 (continued)
Respondents' Demographic Profile

Tenure		
Yes	105	53.8
Categories	**N**	**(%)**
No	90	46.2
Total	195	100.0
Rank		
Instructor	60	30.8
Professor	50	25.6
Associate professor	32	16.4
Adjunct professor	28	14.4
Assistant professor	25	12.8
Total	195	100.0
Education Level		
Master's degree	87	44.6
Ph.D.	63	32.3
Ed.D.	40	20.5
Bachelor's degree	3	1.5
Post Doctorate	2	1.1
Total	195	100.0
College Teaching Experience (Years)		
1-5	32	16.4
6-10	37	19.0
11-15	23	11.8
16-20	23	11.8
Over 20	80	41.0
Total	195	100.0
Age		
Under 28	2	1.1
28-32	2	1.1
33-37	10	5.1
38-42	15	7.7
43-47	15	7.7
48-52	27	13.8
Over 52	124	63.5
Total	195	100.0

Research Question Two

Research question two sought to determine the perceptions of business educators regarding the use of mobile phones for teaching and learning. Table 2 addresses the respondents' perceptions regarding mobile phone utilization in teaching and

learning. With an alpha level of .05, statistical significance was not reached. No further tests were necessary.

Table 2.

Perceived Impact of a Business Educator's Perceptions of Mobile Phone Utilization in the Classroom

Mobile Phone Utilization Perceptions	**F**	**p**
How useful are mobile phones to you in your teaching?	1.527	196
Teaching with mobile phones has the potential to enhance learning.	.432	.785
Teaching with mobile phones is easy.	.855	.492

Research Question Three

Table three addressed the perceived impact of a respondent's perception regarding mobile phone distractions. To identify specific differences, a Scheffė Test found a statistically significant difference in relation to mobile phone use in teaching and learning being a distraction. Particularly, associate professors saw mobile phones ringing in class a distraction more than individuals in the instructor category. Furthermore, a statistically significant difference was found with regard to mobile phone distractions during class time for activities such as texting and talking. Specifically, individuals who held instructor ranks agreed that talking and texting in class was a distraction more than associate professors.

In relation to perceptions about students answering their phones as long as they leave the room, a significant difference was found between associate professors and instructors. In particular, associate professors and instructors were both undecided, but associate professors witnessed a higher mean level of agreement in relation to this variable. Associate professors tended to agree with it being okay to take an important call during class as long as the student leaves the room while instructors were undecided

Table 3

Analysis of Mobile Phone Distraction by Academic Status

Mobile Phone Distraction Perceptions	*df*	*F*	η^2	p
I would agree with a university policy against mobile phones ringing during class time.	4, 176	3.071	.052	.018*
I would agree with an instructor's policy against mobile phones ringing during class time.	4, 177	1.768	.185	.137
I would agree with a university policy against mobile phone use during class time.	4, 177	2.520	.080	.043*
I would agree with an instructor's policy against mobile phone use during class time.	4, 176	1.252	.404	.291

Table 3 (continued)
Analysis of Mobile Phone Distraction by Academic Status

I would generally not agree with policies against mobile phone use in the classroom.	4, 176	.724	.558	.576
I think it is rude when students do not turn their ringers off or to silent mode during class.	4, 177	.145	.816	.965
When a mobile phone rings during class, it is a serious distraction.	4, 177	1.156	.209	.332
I find it bothersome when a mobile phone rings during class time.	4, 174	.989	.207	.415
I do not think mobile phones are a serious problem in my classes.	4, 175	.714	.704	.583
I often hear mobile phones ringing during class.	4, 176	.745	.439	.562
I complain to others about mobile phones ringing or being used in classrooms.	4, 177	2.526	.047	.042*
I hear people complain about mobile phones ringing or being used in classrooms.	4, 177	.452	.800	.771
I have heard/read about mobile phones being used for cheating in school.	4, 176	.668	.502	.615
I think mobile phones have the potential to be an effective resource for cheating on tests, quizzes, etc.	4, 176	.914	.730	.457
I think some students use their mobile phones for cheating.	4, 175	1.226	.247	.302
I do not mind when someone answers his/her mobile phone during class if he/she leaves the room to answer the call.	4, 177	3.123	.017	.016*
Generally, I think mobile phones are a source of distraction in my classes.	4, 177	1.784	.199	.134
I do not mind when students use their mobile phones during class as long as they are not talking on the phone.	4, 176	1.046	.582	.385
If a student gets an important call on his/her mobile phone during class, I think it is OK for him/her to take the call during class time as long as he/she leaves the room.	4, 177	3.530	.002	.008*
It irritates me when a student answers a mobile phone during class.	4, 176	.719	.549	.580

Research Question Four

Research question four sought to determine suggestions for using mobile phones by business educators in teaching and learning. When asked to identify suggestions for using mobile phones in the classroom, the respondents reported the following:

• Show students how they can market products and services and conduct daily business on mobile devices. Demonstrate to students how mobile devices can be used not only personally but also can be very beneficial for work. • Use price comparison activities for personal finance using name brand vs. generic products where students take the PDAs off campus to grocery stores and enter in the data using handwriting recognition. • Use texting and iPods to show students how business communication has evolved and show them current methods of using mobile devices for business.
• Capture the lesson and instruct students to review the lesson on demand.
• Use mobile technology to conduct research on the Internet and access libraries' information. • Do instant messaging, texting, blogging, and tweeting to contact experts.
• Use student response systems in class such as clickers to poll students. • Use mobile devices to contact the educational institutions' emergency response system.
• Using mobile devices extend the computer lab allowing instructors to use technology to support unusual programs. Mobile freedom enhances creativity when designing curriculum and students' coursework.
• Use conference tools in face-to-face and online classes.
• Communicate with students through social media. Setup groups for each class allowing students' more frequent access through their cell phones on sites such as Facebook.
• Teach students to communicate electronically using netiquette.
• Do audio or video podcasts.
• Provide students continuous learning during conditions such as snowstorms, emergencies, and travel.
• Instruct students, including multilingual students, to use the mobile device to replay lectures after class. Provide video tutorials for specific lessons. • Inform students about grades, hot topics, and course content. Use tools to communicate with students and colleagues, teach students lesson content, and update course materials. • Use the mobile devices' address book features, Excel, Access, Word, handwriting recognition, and voice recognition. Beam information from the mobile device to the desktop computer. Use other accessories on the PDA such as the task area. Demonstrate mobile device features to students such as emailing, contacting, mapping, weather, Internet, calendar, calculator, texting, camera, financial, and video. • Use the camera feature for students to generate YouTube video content addressing course materials.

- Use the mobile device with virtual teams to enhance students' group work.
- Use the speakerphone component of the cell phone to bring off-campus speakers to seminars.
- Ask students to respond to course-related questions and text their responses. Display student's text responses using pollingeverywhere.com.

Conclusions and Discussion

This research study examined the business educators' perception regarding the use of mobile phones in the classroom based on their professional rank. Associate professors tend to be slightly more accepting of mobile phone use in the classroom than middle school, high school, and community college educators. This finding could be related to the age and maturity level of the students being taught by associate professors. Because associate professors tend to teach adults, they are cognizant that there may be circumstances that require students to be accessible to their family members, employers, etc. Thus, while associate professors agree with a policy against phones actually ringing in class, they are willing to allow students to respond to an emergency phone call from a silenced phone or message during class as long as they step outside to do so. Middle and high school educators are more concerned with inappropriate use of the mobile devices by the children in their classroom such as texting which can promote negative behavior like cyber bullying (Kolb, 2008; Smith, Mahdavi, Carvalho, Fisher, Russell & Tippett, 2008). Requiring a policy against mobile phone use in class reduces the opportunities for such conduct.

This study also identified how mobile devices can be used in teaching and learning in business education courses and programs. While the study revealed that many individuals are concerned with mobile phone distractions in the classroom, some educators are finding ways to encourage mobile phone use outside of the classroom. Of the respondents, 46% revealed they have used a mobile device for educational purposes. Some shared that they communicate with students using social media such as Facebook, encourage students to work in virtual teams using online conferencing, and provide continuous learning opportunities to their students outside of class.

Recommendations for Further Research

The researchers recommend that more research should be conducted to determine the perceptions of business educators regarding mobile technology classroom use based on teaching disciplines, gender, and educational institutions. This research could be replicated in other professional organizations and educational disciplines. Also, identifying additional ways in which mobile devices can be used in teaching and learning at different educational levels could have a major impact on mobile technology adoption by business educators and those in other disciplines.

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