# SOCIAL MEDIA USE IN ACADEMICS: UNDERGRADUATE PERCEPTIONS AND PRACTICES

By

MARK CIAMPA \*

# EVELYN H. THRASHER \*\*

MARK A. REVELS \*\*\*

\*-\*\* Associate Professor, Information Systems, Gordon Ford College of Business, Western Kentucky University, USA. \*\*\* Assistant Professor, Computer Information Technology, Ogden College of Science and Engineering, Western Kentucky University, USA.

### ABSTRACT

The aim of this research was to elicit student perceptions and practices regarding the use of social media in the academic setting. More specifically, the objectives of this study were to (1) assess student perceptions of technology use in an academic setting and to rank their preferences; (2) determine which resources and communication options available to students and faculty are preferred by students; (3) determine if those preferences change depending upon the reason for communication; and (4) determine if students want to use social media in an academic setting, and if so, in what ways and for what purposes. Using an electronic survey instrument, undergraduate students at a regionally accredited Mid-South university in the United States were asked to rank their preferences regarding the use of eight different communication resources as part of a college course. In addition, students were asked to identify the social media tools they currently use and for what purpose(s), both in and out of the classroom. The results showed that, overall, Facebook was the most commonly used technology, that students use social media primarily for communicating with friends, and email is the preferred method for sending and receiving class assignments and examinations. However, students generally do not want to use social media for academic activities.

Keywords: Social Media, Higher Education, Empirical Research.

### INTRODUCTION

Students who grew up with the Internet (digital natives) use social media to connect with friends, family, and others through text messaging and software applications. In recent years, many faculty have embraced social media as an academic tool with the assumption that the use of social media in an academic setting will be well received by their students. Yet, anecdotally, students have told researchers that, they prefer to keep their social and academic lives separate and, therefore, do not wish to use social media in their classes. Thus, a need exists to investigate these conflicting observations and to expand the research on social media use, particularly among digital natives.

### Literature Review

Institutes of Higher Education (IHEs) are dramatically impacted on all levels by the introduction of new technologies. Duhaney (2005) said that, technology has enormous power to change IHEs to generate innovative ideas, thus providing schools with the required mechanism to change the way of educating and connecting with students. Longanecker (2004) emphasized that, technology will transform the way in which the students can learn and communicate in both their educational as well as private lives. This view is likewise shared by Sapp (1996) and Lorenzetti (2004) said that, technology is significantly changing the lives of both teachers and students. These changes are in part the result of IHEs examining methods for restructuring their offerings to achieve their primary goals and objectives. IHEs see technology as enabling them to work more quickly, thus increasing their productivity, as well as address innovative teaching and research ideas (Elsaadani, 2012).

There are many results of the impact of technology on IHEs, and researchers frequently note the impact of these changes on teaching faculty. For example, using

technology will enable faculty to have more time for student contact, and play a more supportive role with their students (Elsaadani, 2012). Also, Keane (2002) concluded that, a wealth of different educational resources would be provided to faculty as a result of using different educational technologies in their daily routine; and these resources would benefit them in a dramatic way in their teaching tasks. In addition, Brooks, G. and Brooks, M. (2001) suggested that, the teaching role of faculty will be changing as technology changes the process of teaching and learning.

Technology has also significantly changed the student learning as well. Students who have grown up with the Internet, so-called digital natives, appear to use information technology and online information effortlessly. Whereas differences do exist among individuals, this Net Generation of learners is comfortable and confident in online environments. For example, Lorenzo, Oblinger, and Dziuban (2007) noted that, today's students, through chat, Facebook, or Flickr, are continually in touch with friends and acquaintances, even trusting the information and individuals that they meet online. These online relationships are actually facilitated by the exchange of profiles, text messages, photos, music, and similar material. And, according to Lorenzo et al. (2007), today's students are not just information consumers. Students create and re-create with a do-it-yourself, open source approach to material: students often take existing material, add their own touches, and republish it by self-publishing in print, image, video, or audio.

Students enrolled in courses with an online computer component reported that, they have higher instances of help-seeking behavior, particularly from instructors. These students feel less threatened to seek help than students in traditional learning environments. In addition, student achievement is significantly correlated with formal help seeking, academic self-efficacy, and a perceived threat to seek help. They also reported that, they prefer to use electronic means to seek help and that they find it more effective (Kitsantas and Chow, 2007)

Technology impacts students in other ways as well. Instruction is changing from students passively receiving information to having them actively engaged in the learning process. Moore and Kearsley (2005) noted that, as a result of the increasing use of technology in the educational process, students today are taking a new role in their learning in order to meet and be more compatible with their new lifestyle and career needs. Several researchers, including Head (2007), Leech (2006), Philip (2007), and Toledo (2007) suggested that, students' awareness of technology has affected their choices and abilities with regard to their own learning. Students are now expected to locate, evaluate, and utilize online information in order to learn at a deeper level.

Students are active consumers of new technologies in their private lives as well. They show a preference to new and emerging technologies, which is in line with other research studies showed that, young people are extensive users for new and emerging technology. Moreover, students also reported that, their use of technology is dramatically influenced by their family members and friends as they are encouraged to use new technologies (Lorenzo et al., 2007).

Students use a variety of new technology tools in several different ways. According to Elsaadani, students reported the most important benefits of using technology as enhancing communication, suitability and convenience ("anytime, anywhere learning"), enhancing access to information, and facilitating learning and studying through distance. They also reported specific tools that were used in their academic lives: email, Internet, Power Point, and to a lesser extent, Learning Management Systems (LMSs) and podcasts. Web search tools have provided immediate access to information that can be used in performing assignments. LMSs permit students to continue to learn outside traditional classroom boundaries. These tools are used to exchange information with their peers, correspond with faculty, access course materials and class handouts, perform research, complete assignments, deliver class work, and listen to online lectures.

Communication tools, such as email, facilitate the interaction among students and between students and instructors without the need to wait for face-to-face interaction. Students put significantly more thought into

email communication with the instructor and groups of peers than they do for equivalent face-to-face communication (Lightfoot, 2006).

A study by Layzell et al. (2000) asked students, if they enjoyed learning by using specific types of technologies. The most frequently cited technologies were performing Internet searches (80.2%), learning through text-based conversations over email and text messaging (44.3%), and by contributing to websites, blogs, or wikis (35.5%). Slightly more than half of the students (50.8%) said that, they like to learn through programs they can control, such as video games or simulations. LMSs also ranked high among students as a technology with educational value. Of the respondents, 82.3% have used an LMS, most of them using it several times per week or more often. At four-year institutions, only slightly more seniors (85.3%) have used an LMS than freshmen (77.1%); at community colleges 60.1% have used an LMS. Consistent with previous years' findings, respondents generally like using a LMS: 57.8% of students said their LMS experience is positive, while an additional 11.7% said their experience is very positive. Only 1 in 20 students (5.3%) reported an overall negative experience with LMSs. Perceptions about technology's impact on courses are consistent across most demographic factors. In terms of majors engineering and business majors agree slightly more with all of the assessments regarding technology use in education.

However, not all educational technology tools generate the same perceived benefits from students. Video conferencing consistently received low marks from students. Students from remote sites who did not know each other reported that, they felt very uncomfortable with the video and audio technologies, preferring the relative anonymity provided by chat, email and whiteboards (Layzell et al., 2000). On projects, where student-to-student communication was performed via email, this has the advantage of providing a personal running log of emailbased discussions. These can then be later indexed and searched, referred to by Sproull (1991) as built in external memory. Despite these advantages to using email, student project members tended to be less committed to a project when much of the communication takes place by email, possibly reducing the personal commitment to a project. This was particularly noticeable in the student projects, where students felt it was not their problem and thus avoided dealing with issues simply by not responding to communications from other team members (Layzell et al., 2000).

Overall, students embrace instructional technology that has these characteristics: it is pervasive (supports all aspects of their study and they perceive that they are part of a wider community of peers with whom they share resources and ask for help), personalized (appropriates technologies to suit their own needs), adaptive (the use of the tool is not rigid but students can adapt its use to suit their individual means of learning), transferable (they can apply the skills gained through using technologies in other aspects of their lives), and integrated (students can use tools in a combination of ways to suit individual needs) (Conole et al., 2008).

As these statistics indicate, social networking is being used frequently in IHEs for a number of purposes. Social networking is nearly ubiquitous: 85.2% of respondents use social networking, primarily Facebook, to keep in touch with others. Virtually all respondents 18-19 years old use social networking (95.1%), in contrast to half of respondents aged 25 or older (50.2%). Facebook is currently the tool of choice at Doctoral, Master's, and Bachelor's institutions. Seniors, closer to entering the workforce, are more likely to use LinkedIn than are freshmen (Salaway et al., 2008). The amount of time that students spend online using social networking varies. Most respondents (55.8%) spend 5 hours or less per week on social networks, while another fourth (26.9%) spend between 6 and 10 hours per week. While online the most common use is to stay in touch with friends (96.8%).

As would be expected, many faculty have embraced social networking as a tool to use with students. Faculty are encouraged to adopt different learning technologies in their teaching and learning activities in order to meet this new breed of students who constantly use technology. Because, social networking is a tool that students are aware of and familiar with in their social life (Elsaadani, 2012). It is natural that, faculty would elect to use these tools

extensively in teaching. Some researchers such as Newton (2003) and Panda and Mishra (2007) have suggested that, the use by faculty of specific technology for teaching and learning activities and their preference for these technologies is not always based upon whether they themselves are recent users of the technology. It was shown by Selwyn (2007) and Foley and Ojeda (2008) that, this adoption is often a result of IHE's policies and management practices.

Among instructors, early adopters used social networking in the classroom in a variety of ways. At one end of the spectrum, instructors replaced more traditional media with social networking as a means of broadcasting course announcements, recognizing that Facebook messages are more likely to be seen by students who check Facebook on a daily basis but who read instructional email only occasionally. Other instructors used social media in the hopes of energizing the course material by capitalizing on the fact that a new medium is often initially more engaging and interesting for students than older options. And some faculty used social networking because of a perceived appreciation by students to receive courserelated announcements in a medium in which they are already participating instead of the need to log into a separate learning management system (Salaway et al., 2008).

Echoing the sentiment of many faculty, one researcher indicated that, she believed social networking has a real potential to be used to support teaching and learning practices, although their true utility will be for supporting informal, peer-to-peer exchanges and campus connections, as opposed to being utilized as a repository for documents or other traditional uses. In fact, the social affordances of these tools, such as making identity information more salient during class discussions or supporting peer-to-peer connections, can accommodate different learning styles inside and outside the classroom (Salaway et al., 2008).

As summarized by EDUCAUSE (7 Things You Should Know About Facebook, 2006), "Any technology that is able to captivate so many students for so much time not only carries implications for how those students view the world but also offers an opportunity for Educators to understand the elements of social networking that students find so compelling and to incorporate those elements into teaching and learning" (p. 2).

However, students do not universally share this sentiment of using social networking tools in education. Although, students believe that, some tools used in their private lives, such as social networking, also benefit them in their professional and academic lives, they are resistant to using social media within instruction (Elsaadani, 2012). Salaway et al. (2007) noted that, students report a clear distinction about the technology tools that they do not want to use in their academic activities: students said that social networking technologies as well as instant messaging are preferred for their social life away from the academic settings. In the same vein, other researchers (Lohnes and Kinzer, 2007, and Weaver et al. 2008) concluded that, to an extent, students resist the use of some technologies in their academic life, preferring to use them in their social life outside the academic settings. And, only 5.5% of students surveyed said, they have extended their use of social networks to communication with instructors about courserelated matters (Salaway et al., 2008). In fact, students have expressed concerns about involving instructors in their social networking lives: many are being adamant that social networking sites should be the exclusive realm of students.

#### Objectives

Given the wide variety of technology tools available to students, including LMSs, communication technologies, and social media, the objectives of this study were to:

- Assess student perceptions of technology use in an academic setting, and to rank their preferences;
- Determine which resources and communication options available to students and faculty are preferred by students;
- Determine if those preferences change depending upon the reason for communication;
- And, determine if students want to use social media in an academic setting, and if so, in what ways and for what purposes.

### Method

### Data Collection

Using an electronic survey instrument, Undergraduate students at a regionally accredited Mid-South university in the United States were asked to rank their preferences regarding the use of eight different resources as part of a college course. Specifically, they were asked to rank Faceto-Face, In-Class Communication; Email; Learning Management System (Blackboard); Text Messages; Facebook; Twitter; Phone; and other in the order of most preferred to least preferred. Students ranked their preferences for the use of these tools/methods for each of the following course-related tasks: receiving class-wide communication from the professor, receiving individual communication from the professor, sending communication to the professor, submitting class assignments, and submitting exams or assessments. In addition, students were asked to identify the social media tools they currently use and for what purpose(s), both in and out of the classroom. Finally, students were asked to rate their level of agreement with the following statements on a scale of 0 (Strongly Disagree) to 100 (Strongly Agree):

- I believe using social media in a college course would enhance my ability to be successful in that course.
- I believe professors should use social media to communicate with their students.
- I learn more from social media than from any other source.
- If I had to live without social media, I wouldn't notice the difference.
- Social media has a major impact on my life.

## Findings

The survey was completed by 245 undergraduate students. As Table 1 indicates, the average age of the participants was 24.43 with a minimum age of 18 and a maximum age of 63. As we might expect, 63 years of age was an outlier and may have skewed the average a bit. The sample was almost evenly split across males and females, as well as across classifications. There were fewer freshmen, but the other classifications were fairly evenly represented.

Students were asked to indicate all of the social media they

Female	119
Male	126
Average Age (in years)	24.43
Minimum Age (in years)	18
Maximum Age (in years)	63
Freshman	41
Sophomore	64
Junior	66
Senior	74
Full-Time Student	212
Part-Time Student	33
Have used social media in a class	144
Have not used social media in a class	101
Average Self-Reported GPA	3.15
Minimum Self-Reported GPA	1.57
Maximum Self-Reported GPA	4.00
Average Hours per Week Spent on Social Media	21.24
Maximum Hours per Week Spent on Social Media	153
Minimum Hours per Week Spent on Social Media	0

Table 1. Demographics of Participants

currently use. As Table 2 shows, Facebook is still the most commonly used social media application, with Twitter and Instagram in second and third, respectively. Only 9 of those surveyed indicated that, they do not use social media. Since the numbers in Table 2 sum to much more than our sample size of 245, it is clear that, many students are using multiple social media applications.

Table 3 shows the purposes for which students indicate they use social media. Communicating with friends, entertainment, and communicating with family were their top 3 choices. Those uses more closely associated with academia were selected least.

Students were asked to rank their preferences for receiving

Which of the following social media do you currently use? (Check all that apply)	
Social Media Tool	Count
Facebook	209
Twitter	155
Instagram	142
Pinterest	84
LinkedIn	43
Other	23
Do not use social media	9

Table 2. Social Media Use

For which of the following purposes do you use social media? (Check all that apply)	
Purpose	Count
Communicating with Friends	217
Entertainment	204
Communicating with Family	182
Community Event Information	127
Communicating with Classmates	115
College Event Information	107
Classwork Information	76
Professional Connections	71
Communicating with Professors	51

Table 3. Purpose for Social Media

class-wide communication from their professors. Based on the average order of preference, Table 4 shows that students ranked email first with an average preference of 1.90, a minimum ranking of 1, and a maximum ranking of 6.

Students were asked to rank their preferences for receiving individual communication from their professors. Based on the average order of preference, Table 5 shows that, students ranked email first with an average preference of 1.76, a minimum ranking of 1 and a maximum ranking of 6.

Students were asked to rank their preferences for sending communication to their professors. Based on the average order of preference, Table 6 shows that students ranked email first with an average preference of 1.50, a minimum ranking of 1, and a maximum ranking of 5.

Students were asked to rank their preferences for submitting

Assuming all options are availad class-wide communication from $(1 = most preferred, 8 = least)$	n your professor?	fer to receive	9		
Tool Average Order Highest of Preference Rank					
Email	1.90	1	6		
Face-to-Face in Class	2.22	1	7		
Blackboard Announcement	2.76	1	7		
Text Message	3.79	2	7		
Facebook Post	5.38	1	7		
Twitter Post	5.89	1	7		
Voice via Phone	6.07	2	7		
Other 8.00 8 8					

Table 4. Receiving Class-Wide Communication

Assuming all options are available, how do you prefer to receive individual communication from your professor?

	Average Order of Preference		Lowest Rank
Email	1.76	1	6
Face-to-Face in Class	2.18	1	8
Blackboard Announcement	3.49	1	7
Text Message	3.59	1	7
Facebook Post	5.40	1	7
Voice via Phone	5.58	1	8
Twitter Post	6.06	2	8
Other	7.94	3	8

Table 5. Receiving Individual Communication

Assuming all options are available, how do you prefer to send communication to your professor?

Tool	Average Order of Preference		Lowest Rank	
Email	1.50	1	5	
Face-to-Face in Class	2.28	1	8	
Blackboard	3.53	1	8	
Text Message	3.71	1	7	
Facebook Post	5.37	3	7	
Voice via Phone	5.58	1	8	
Twitter Post	6.04	2	7	
Other	7.98	6	8	

Table 6. Sending Communication

class assignments. Based on the average order of preference, Table 7 shows that, students ranked the Blackboard Learning Management System first with an average preference of 1.55, a minimum ranking of 1 and a maximum ranking of 4.

Students were asked to rank their preferences for submitting exams and assessments. Based on the average order of preference, Table 8 shows that, students ranked the Blackboard Learning Management System first with an average preference of 1.59, a minimum ranking of 1, and a maximum ranking of 4.

In addition to ranking their communication preferences and indicating their purposes for using social media, students were asked about their perceptions of social media. Table 9 shows the reactions to a set of statements regarding social media, with a rating scale of 0 (Strongly Disagree) to 100 (Strongly Agree). Each statement had a minimum rating of 0 and a maximum rating of 100. Most had an average rating near 50, with the exception of "I learn more from social media than any other source", which had an average rating of only 38.81.

Specifically regarding the statement, "I believe using social media in a college course would enhance my ability to be successful in that course", reactions were mixed. As Figure 1 shows, while most students indicated a neutral reaction or some agreement with the statement, very few

Assuming all options are available, how do you prefer to submit class assignments? (1 = most preferred, 8 = least preferred)					
Tool Average Order Highest I of Preference Rank					
Blackboard	1.55	1	4		
Face-to-Face in Class	2.43	1	5		
Email	2.53	1	4		
Electronic Application	3.50	1	5		
(i.e. SAM, Connect, WileyPlus, etc.	:.)				
Other	4.98	4	5		

#### Table 7. Submitting Class Assignments

Assuming all options are available, how do you prefer to submit exams/assessments? (1 = most preferred, 8 = least preferred)					
Tool Average Order Highest Lo of Preference Rank R					
Blackboard	1.59	1	4		
Face-to-Face in Class	2.14	1	5		
Email 2.81 1					
Electronic Application (i.e. SAM, Connect, WileyPlus, etc	3.48	1	5		
Other	4.99	4	5		

Table 8. Submitting Exams and Assessments

Please share your feelings about the following statements: (0=Strongly Disagree, 100=Strongly Agree)

Question	Average	Minimum	Maximum	Standard Deviation
I believe using social media in a college course would enhance my ability to be successful in that course.	52.40	0	100	26.02
I believe professors should use social media to communicate with their students.	49.59	0	100	26.59
l learn more from social media than any other source.	38.81	0	100	27.08
If I had to live without social media, I wouldn't notice the difference.	46.00	0	100	30.56
Social media has a major impact on my life.	49.16	0	100	28.38

#### Table 9. Perceptions about Social Media

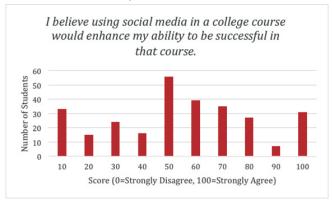


Figure 1. Perceptions of Social Media to Enhance Success in a College Course

(approximately 30 out of 245) indicated strong agreement. On the other hand, approximately 30 out of 245 indicated strong disagreement.

As Figure 2 shows, the statement, "I learn more from social media than any other source" received a strongly negative response, with more than 60 students indicating strong

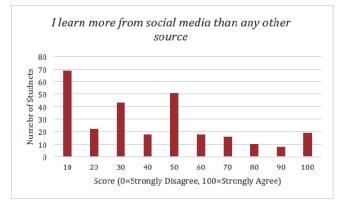


Figure 2. Perceptions of Learning from Social Media

disagreement and less than half of the participants indicating any level of agreement.

#### Conclusions and Discussion

### **Demographics**

While the demographics of the participants were mainly undistinguished, there are two characteristics worth mentioning. First, most of the students surveyed reported already using social media in a class. Thus, it appears that regardless of student perceptions of this technology, many faculty are already making use of social media in the classroom.

Another interesting aspect of the demographics was the metric for the maximum hours per week spent on social media. At least one student reported spending 153 hours on social media per week, which represents 91% of all available time. While it is not possible to know exactly how a student could spend that much time on social media, one explanation might be that they considered having a smart phone with an active social media application running all the time as satisfying the criteria for the question. While this number is probably an outlier, students still reported spending an average of 21.24 hours per week on social media. Considering that many universities expect students to spend three hours out-of-class for every hour in-class (36 hours for a 12 hour load), this amount represents 59% of the out-of-class time requirement.

### Student Perceptions of Technology Use in Academia

In terms of which social media technology students currently use, Facebook was rated the most used by a large margin. This is not surprising, as Facebook has more capabilities than other social media to support students' preferred use of social media, as indicated by their survey responses. Specifically, students indicated that they primarily use social media for communicating with friends, family, for entertainment, and for gathering community event information. These results were consistent with Salaway et al. (2007), who reported that, students generally do not want to use social media for academic activities. The findings indicate that, students widely use social media for personal connection, but much less for general academic purposes.

# Student Preferences for Available Communication Resources and Options

When asked about preferences regarding how to receive class-wide communication from their professors, students widely reported that, they preferred other options to social media, including email, face-to-face, and via learning management systems (Blackboard). Social media technologies were ranked the lowest. Similar results were reported for preferences regarding how to receive individual communication from their professors. In fact, the results are almost identical to class-wide communication except for a slight preference of voice-over-phone contact versus Twitter posts. Students' preferences regarding how to send information to their professors were nearly identical to receiving information from their professors. With respect to submitting class assignments and examinations, students reported a preference to the use of a learning management system (Blackboard), face-to-face submissions in the classroom, e-mail, and other electronic applications.

# Student Preferences Regarding Social Media Use in Academia

Finally, overall student feelings about the use of social media in the classroom and out were highly mixed. For example, regarding the question "I believe using social media in a college course would enhance my ability to be successful in that course", 30 students strongly agreed while 33 students strongly disagreed. Of these questions, only "I learn more from social media than any other source seemed to lean mainly toward disagreement as 19 students strongly agreed, while 69 students strongly disagreed.

The results of this research were consistent with the results found by Salaway et al. (2007), who reported that students generally do not want to use social media for academic activities. Students tend to think of social media as a way to connect with friends and family, not a way to connect with professors and schoolwork. The research also showed that, some professors are already using social media for academic purposes, notwithstanding student feelings and perceptions. This study further suggests that, feelings and perceptions about the general value of social media, and whether social media should be used for academic purposes, are highly mixed.

### Recommendations

It is recommended that, future research look more deeply into student perceptions of technology usage in academic settings. Because, this study looked at broad categories of social media tools, future research may attempt to isolate precisely which technologies are accepted or rejected. Social media tools serve different purposes and appeal to users for different reasons. For example, Facebook lends itself to conversation, while Instagram is limited to pictures with comments. Therefore, taking a more in-depth look at social media tools may help to determine if there are specific features of these tools that cause students to accept or reject them. Also, social networking tools other than Facebook can be examined. Additional future research may explore how students perceive the social media components now included in many electronic assets developed by publishers to accompany textbooks. Are social media components that are exclusively used for academic purposes viewed differently by students? Finally, as this study examined only student perceptions, additional research may be conducted into the perceptions of faculty regarding social media use in education.

## References

[1]. Educause, (2006). 7 Things You Should Know About Facebook. Retrieved from https: //library. educause.edu/~/media/files/library /2006/9/eli7017pdf.pdf

[2]. Brooks, G., & Brooks, M. (2001). In Search of Understanding: The Case for Constructivist Classrooms. Upper Saddle River, NJ: Merrill Prentice Hall.

[3]. Conole, G., de Laat, M., Dillon, T., & Darby, J. (2008). "Disruptive technologies', 'pedagogical innovation': What's new? Findings from an in-depth study of students' use and perception of technology". *Computers & Education*, Vol. 50, pp. 511-524.

[4]. Duhaney, D.C. (2005). "Technology and higher education: Challenges in the halls of academe". *International Journal of Instructional Media*, Vol. 32(1), pp.

7-15.

[5]. Elsaadani, M. (2012). "Exploration of teaching staff and students' preferences of information and communication technologies in private and academic lives". *International Journal of Computer Science Issues*, Vol. 9(2), pp.396-402.

[6]. Foley, J., & Ojeda, C. (2008). "Teacher beliefs, best practice, technology usage in the classroom: A problematic relationship". *Proceedings of Society for Information Technology and Teacher Education International Conference,* pp. 4110–4117. Chesapeake, VA: AACE.

[7]. Head, B. (2007). "The D generation: Leading the emerging generation of digital natives calls for a light touch". *AFR Boss*.

[8]. Keane, J. (2002). "Teacher vs. Computer: Where Educators Stand in the Technology Revolution". *T.H.E. Journal*, Vol.30(1), pp.38-40.

[9]. Kitsantas, A., & Chow, A. (2007). "College students' perceived threat and preference for seeking help in traditional, distributed and distance learning environments". *Computers and Education*, Vol. 48(3), pp. 383-395.

[10]. Layzell, P., Brereton, O., & French, A. (2000). "Supporting collaboration in distributed software engineering teams". *Proceedings of the Seventh Asia-Pacific Software Engineering Conference,* pp.38-45. Singapore: IEEE Computer Society.

[11]. Leech, R. (2006). "Teaching the digital natives". Teacher: The National Education Magazine, pp. 6–9.

[12]. Lightfoot, J. (2006). "A comparative analysis of e-mail and face-to-face communication in an educational environment". *Internet and Higher Education*, Vol. 9, pp. 217-227.

[13]. Lohnes, S., & Kinzer, C. (2007). "Questioning assumptions about students' expectations for technology in college classrooms". *Innovate*, Vol. 3(5).

[14]. Longanecker, D. (2004). "The perfect storm in higher education". *Spectrum*, Vol.77(4), pp. 22-25.

[15]. Lorenzetti, J. (2004). "Transformative assessment in higher education". *Academic Leader*, Vol. 20(4), pp. 4-8.

[16]. Lorenzo, G., Oblinger, D., & Dzluban, C. (2007). "How choice, co-creation, and culture are changing what it means to be net savvy". *EDUCAUSE Quarterly*, Vol. 30(1), pp. 6-12.

[17]. Moore, M., & Kearsley, G. (2005). Distance Education: A Systems View. 2nd Edition, Belmont, CA: Wadsworth.

[18]. Newton, R. (2003). "Staff attitudes to the development and delivery of e-learning". *New Library World*, Vol.104(1193), pp.412–425.

[19]. Panda, S., & Mishra, S. (2007). "E-Learning in a mega open university: Faculty attitude, barriers and motivators". *Educational Media International*, Vol.104(10), pp.323– 338.

[20]. Philip, D. (2007). "The knowledge building paradigm: A model of learning for net generation students". *Innovate*, Vol.3(5).

[21]. Salaway, G., Borreson, J., & Nelson, M. (2007). "The ecar study of undergraduate students and information technology". Boulder, CO, EDUCAUSE, Center for Applied Research.

[22]. Salaway, G., Caruso, J., & Nelson, M. (2008). "The ecar study of undergraduate students and information technology". Boulder, CO, EDUCAUSE, Center for Applied Research.

[23]. Sapp, D. (1996). "Too much technology". *MEA Voice*, Vol.74(2), pp.5.

[24]. Selwyn, N. (2007). "The use of computer technology in university teaching and learning: A critical perspective". *Journal of Computer Assisted Learning*, Vol.23(2), pp.83–94.

[25]. Sproull, R. (1991). "New ways of working in the networked organization". *A Lesson in Electronic Mail*. Boston: MIT Press.

[26]. Toledo, C. (2007). "Digital culture: Immigrants and tourists responding to the natives' drumbeat". International Journal of Teaching and Learning in Higher Education, Vol.19(1), pp.84–92.

[27]. Weaver, D., Spratt, C., & Nair, S. C. (2008). "Academic and student use of a learning management system: Implications for quality". *Australasian Journal of EducationalTechnology*, Vol.24(1), pp.30–41.

## ABOUT THE AUTHORS

Dr. Mark Ciampa is an Associate Professor of Information Systems in the Gordon Ford College of Business at Western Kentucky University, Bowling Green, Kentucky, USA. Prior to this, he was an Associate Professor and served as the Director of Academic Computing at Volunteer State Community College in Gallatin, Tennessee for 20 years. Mark has worked in the IT industry as a computer consultant for the U.S. Postal Service, the Tennessee Municipal Technical Advisory Service, and the University of Tennessee. He has published 17 articles in peer-reviewed Journals and is also the Author of over 23 Technology Textbooks, including Security + Guide to Network Security Fundamentals (5ed), CWNA Guide to Wireless LANs (2ed), Guide to Wireless Communications, Security Awareness: Applying Practical Security in Your World (5ed), and Networking BASICS. Dr. Ciampa holds a PhD in Technology Management with a specialization in Digital Communication Systems from Indiana State University and also has certifications in Security + and HIT.

Dr. Evelyn H. Thrasher is an Associate Professor of Information Systems in the Gordon Ford College of Business at Western Kentucky Bowling Green, Kentucky, USA. She serves as a Director of the Professional Education and Knowledge Program and as the Knicely Faculty Fellow in Leadership. She holds a BS in Mathematics from East Tennessee State University and an MBA and PhD in Management Information Systems from Auburn University. Prior to academia, Dr. Thrasher worked as an Information Technology Systems Analyst for Eastman Chemical Company for 11 years. She has published 20 articles in Communications of the AIS, Decision Support Systems, Hospital Topics, and other Journals, and has presented at numerous National Conferences. Her research focuses on Technology Education, the use of Technology in Academia, and the Strategic Management of IT in Health Care.

Dr. Mark A. Revels is an Assistant Professor of Computer Information Technology in the Ogden College of Science and Engineering at Western Kentucky University, Kentucky, USA. Mark Revels is a Technology Educator, Researcher, and Professional with thirty years of progressive experience including Biomedical and Hospital Physical plant Systems Management; Development and Management of Decision Support, Inventory Control, and Logistics Systems; and Development and Management of Core Manufacturing Systems for multiple International manufacturers. He holds a Ph.D. in Technology Management from Indiana State University. In addition, he also holds three industry certifications: one in Biomedical Equipment Management (Association for the Advancement of Medical Instrumentation), one in Information Systems (Institute for the Certification of Computing Professionals), and one in Manufacturing and Operations Management (The Association for Operations Management).





