Investing IT in Business Students: On Line Peer Work Is Worth That Extra Mile

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Abstract

It is held that today's students tend to be tech-savvy, interrelating 24/7 with friends, family, and people around the world by chatting, audio-visually recording, posting pictures, blogging, and creating wikis. Studies have also found that not everyone is on board the Firefox/Facebook/cell phone generation. Integrating educational tools online Business courses in a step-by-step process may motivate university students into the dynamic, multi-dimensional, and social context of learning today. University educators who are strong adherents of educational technology are in the process of building the technology infrastructure to integrate IT into their curriculum and students' mind sets. Nonetheless, it has been noted that Web 2.0 tools and practices may be challenging to business students who have simply mastered IT socially. The purpose of this study is to prove that through appropriate knowledge management of students' on-line performance, it may be easier for teachers to facilitate undergraduate business student's performance success in business courses. Two critical components were addressed: (a) a step-by-step learning process, and (b) student-teacher interaction. Case assessment was conducted. Implications and recommendations were made.

Key Words: Higher Education; Integrating educational technology;   A Step-by-Step Learning Process; Digitally-Driven Students; Student-Teacher Virtual-Interaction;   Blended Learning; Team Work; Improved Performance.

Introduction

Students today are moving away from their community of place and intentionally selecting communities of interest. In fact, business classrooms are packed with digital natives who may be in class yet have opted to be in their communities of interest, online socially networking (Collins & Halverson 2009). It is held that third millennium students are digital natives leading the transition to a fully wired and mobile nation (Brown 2009; LeRouge et al. 2004), to what has been termed the Social Age (Tirpak 2011). These tech-savvy students tend to be bright, engaged, directed, and energetic, networking with friends, family, work partners, and their boss online (Akhras 2011) though a majority of their courses are still text-driven with schools and colleges making small incremental changes to deal with tensions technological change is causing (Twining 2010; Education/Evolving 2005).

Technology offers solutions to problems (Kristjansdottir 2010). Education has an opportunity to develop a revised curriculum revolutionizing the way education content is presented, extend the depth and scope of the academic programs, enrich the efficiency and effectiveness of course delivery and improve the content, variety, and administration of assessments (Parker 2010; Newby et al. 2006). Proactive teaching institutions have adopted knowledge management to contribute to the institution's success (Heckster 2007) driven by an awareness of the importance of information and followed by a constant search for ways to create, store, integrate, tailor, share, and make available the right knowledge, to the right people, at the right time (Bennet & Bennet 2003).

Change may be a difficult process (Wild et al. 2011). If teaching institutions are to successfully adopt educational technology, much more than minor adjustments in current practice are required.   Effective and efficient integrations requires revamping thinking about teaching and learning: restructuring universities in terms of planning, management, and organization (Wiske et al. 2005). So even though incorporating Web-based education has yielded a great increase in courses and study opportunities, strategic and tactical planning are essential (Clearly & Marcus-Quinn 2008; Barbera 2006; Dunlap 2005). As a practitioner-researcher, I hold that educators today ought to be actively involved in tactical change, integrating technology in a step-by-step fashion.

In today's world, one of accelerating change, where multiple skills become obsolete as soon as they are learnt, schooling and learning are both under siege. Economies-of-scale and computer-based instructional technologies seem to have collapsed under their weight as their promises did not live up to expectations. If the focus is shifted from teaching to learning, as from instruction to productive inquiry, the new social media and social networks seem to allow a form of peer-based social learning for the world of today's student (Brown 2009). Online interaction between students and their instructor and amongst students themselves locally and internationally is significant as online learning processes, one essential as a starting point for business students given the global marketplace in which they are to work (Robbins & Judge 2011; Peddibhotla & Subramani 2006). The internet provides an infinite set of resources, visual, textual, and multi-lingual. Such resources are the working tools that students might choose to integrate into their university research papers, assignments, tasks, or oral presentations. It follows that integrating E-Learning (Bates 2005) into the business course may better facilitate the kind of learning outcomes needed in a knowledge-based society (Du & Xu 2010) or it may be best facilitated by blended learning where students are able to gain the best of two learning methodologies--face-to-face interaction and virtual (Clark & James 2005); however, not everyone is receptive to change.

The range of available communication technologies has become exceptionally rich in the past decade, from asynchronous e-mail and discussion boards to virtual classrooms, synchronous chats, audio conferencing, and videoconferencing (O'Bannon & Puckett 2010). Virtual worlds have facilitated new ways of communication, collaboration, and cooperation (Fetscherin & Lattemann 2008). Online collaboration provides an effective ground for students' interpersonal, group, and intercultural communication skills (Moos & Honkomp 2011). As students work in pairs, they learn how to conduct their project online, how to sort out differences in online etiquette, explore the different perspectives furnished, negotiate meaning, create synergy, and finally make critical decisions (Akhras 2010a; Sabieh 2011; Akhras 2010b; Brown 2003). Students' network of learning has expanded whereby communication on the World Wide Web (WWW) is in the process of moving from one-to-many display of information on the homepage to the reverse of many-with-many interaction of multiple participants in the construction of social-networks as Facebook (http://www.facebook.com), communities of practice, user-driven encyclopedias as Wikipedia (http://www.wikipedia.org), and collaborative-content-sharing systems as Connexions (www.http://cnx.rice.edu) (Dohn 2009). This has been called the educational revolution (Collins & Halverson 2009). This new world full of vast opportunities to learn has markedly influenced what students chose to learn in class or on their own. Some argue that student demand makes online learning inevitable (Brooks 2009).

In general, Business students are aware that information technology has revolutionized the viability of communication, their sense of self, and their perception of those around them. A new understanding of oneself exists today (Friedman 2005). Students may understand themselves as part of a community; they have now come to perceive themselves as connected to those they are *Linked* to or those they *Facebook* or *Tweet* with; their sense of self is part of a wider-whole, any of whom they can freely join; it is a collaborative consumption, where what is mine is also yours and what is yours is also mine (Botsman & Rogers 2010; Taggar & Haines III 2006).

Given this new perception of who they are, learners likewise realize that major transformations in the learning process are essential in terms of technology integration (Brooks 2009; Prerost 2000; Anthony 2000; Kiley 2000), in how they are taught, but most importantly, in the teachers' underlying concept (Akhras 2011a; Bosch 2006; Barrow 2000). Similarly, proactive educators geared towards life-long learning, driven by the need to adopt multiple roles in order to become up-to-date, able to embrace the latest theory, practice, classroom methodology, or step-by-step process that integrates technology to meet students' achievement needs are taking steps. Such a strategic and tactical move is potentially transformational (Kennewell 2010; Dohn 2009).

Leading-edge software tools help students manage the knowledge assets of their course (Vincent, McDougall, & Azinia 2010; Schweik 2007). Class portals may empower learner interaction providing them with the suite of communication tools to form their own learning communities; course management systems facilitate knowledge management of courses in terms of delivering content to students, conducting learning activities, and assessing learning outcomes (Roqueta 2009; Graf 2008). Many teachers and practitioner-researchers have invested in learning how to integrate these tools in their classroom and outside their class to enrich face-to-face instruction constructively (Clearly & Marcus-Quinn 2008; Bates 2005; Lynch 2002), yet not all have made this investment (Akhras 2010b; Gibson et al. 2003). Falling short, these teachers are no longer comfortable nor experts in the use of educational technology in their business courses (Akhras 2009).

They may not incorporate collaborative learning in business students' research work as using the discussion forum to have the class debate polemic issues online or build the synchronous virtual classroom for pair-work or group work or generate online chatting to discuss course material with classmates and teacher (Van De Hooff et al. 2010; Kozub 2010). Research holds that online collaborative learning significantly increases disseminating information, communicating with classmates, student involvement in the course material, and deepening student learning (Akhras & Akhras 2010a; Yukawa 2010; Goyal & Purhoit 2010; Costen 2009; Gareis 2006). Yet those that do not espouse integrating technology in their course believe that collaboration is the watchword of the future when knowledge sharing, building, and transference is face-to-face (Akhras & Akhras 2010b; Borich 2007; Peddibhotla & Subramani 2006; Boud 2006). They may hold that students may want to interact in a place with people they can actually see and speak to because they are in front of them not on a screen (Goodwin and Goodwin 2004). Studies note that some students prefer face-to-face discussions with their teacher when they ask for assistance (Moos & Honkomp 2011; Dohn 2009): Course material is better assimilated when verbal and nonverbal communication that is proximal promotes constructive bonding. As a practitioner-researcher, I hold that teaching/learning in classrooms today is proximal whether online or offline when teaching/learning is carefully constructed and appropriately translated; in business courses, a tactical process may develop the course material in a step-by-step manner where the teacher acts as a migrant (Lowes 2011) facilitating students' ongoing performance.

The Study

The purpose of this study is to prove that through the educator's appropriate tactical knowledge management of Business students' on-line performance, it is easier to facilitate undergraduate business student's performance success.

- Hypothesis One: Business students working in pairs perform significantly better in online assignments than those who are paired and are working conventionally, face-to-face.
- Research Question One: Have the paired participants selected their online material within the appropriate time interval?
- Research Question Two: Have the paired participants developed their online assignment within the appropriate time interval?

The 48 participants, junior and senior level business students, belonged to two sections of an undergraduate business course taken at the Faculty of Business Administration and Economics at a private Catholic university whereby participants in each section were paired. These participants attended a business course taught by the practitioner-researcher taught across one academic semester. As such, the participants were a convenience sample. The sample who were divided into an experimental group and a control group were informed that research work was being conducted. The procedure adopted in this study covered the path taken by the two groups of participants across one academic semester.

- The procedure adopted was to evaluate both online and offline course assignments that are part of the research paper assignments written by participants who attended the undergraduate business course.
- Those in the experimental group were informed that they would learn about the research paper both in class and on-line; this process would take place in a step-by-step manner across the first five weeks of the Spring Semester. In order to learn about the research paper, participants would either be informed in class whereby the teacher in the classroom would provide hand-outs, explain on the board, and/or rehearse online the steps of the online research assignment or the participants had to go online to their business course and read what had been posted. For the experimental group, the first assignment was conducted in class with the teacher observing the paired participants online performance whereas the second assignment had to be developed online by the pre-assigned peers within a defined time-intervals in the step-by-step process. The third assignment was to have the completed pair-work submitted as the printed course research paper.
- The context was different for those paired participants in the control group. Those in the control group handled their course assignments in the traditional manner: the teacher would explain the three tasks, provide hand-outs and/or write the step-by-step process on the board across the first five weeks of the semester. The three submission dates were set whereby task one was showing the teacher the referenced business-related-material; task two was discussing the paper-in-progress with the teacher; and task three was submitting the completed research as a printed copy.

The research was conducted as a case study in that it investigated a contemporary phenomena within its real life context especially when the boundaries between phenomena and context are not clearly defined (Yin 2003). Here, the case investigated a relatively few number of incidents, covering features of a naturally occurring event, with both qualitative and quantitative data in order to understand what was really happening (Gomm, Hammersley, & Foster 2000). Then, the study refers to both qualitative and field-based constructions and analysis of events (Ghauri & Gronhaug 2010). Three main research areas were probed: selection of online material, performance-on-assignment, submission of completed assignment. The research areas were probed with three research instruments with each scored differently. Below is a list of instruments used to assess the main areas probed.

- Rubric One: The first assessment instrument was evaluating pair-work to retrieve business-related-material within the set time-interval.
- Rubric Two: The second assessment instrument was evaluating the research paper in-progress developed by the experimental and control group pair-work and whether it was done on time.
- Rubric Three: The third assessment instrument was evaluating the printed research paper developed by the experimental and control pair-work and submitted within the defined time-interval.

Based on the results, it was found that working in pairs online did not give the expected edge. Business students did not perform better on paired online assignments than those working on paired conventional assignments (t-test=0.35; p<0.05). Following a step-by-step process through which the practitioner-researcher appropriately managed knowledge, the paired participants used online technology successfully: First, to select their research material online; second, to develop their assignment online; and, lastly, to ensure the quality and format of the finished research paper as a printed text conducted within defined time interval.

The step-by-step process was implemented. It translated into critical purposeful learning. Communication and computing technologies may have been seen as integral for the participants, but the online tools, as such, did not lead to significant success as has been found in other research studies conducted(Dohn 2009). Not all of the participants were comfortable with educational technology and/or with the collaborative nature of the assignment--though the results reflected a marked improvement on previous research work conducted (Akhras 2011a; Akhras 2010b). Research studies indicate that social networking has changed the way students communicate, socialize, and collaborate (Moos & Honkomf 2011; Luo 2011; Tirpak 2011; Dunlap 2011; Tams 2008). What the practitioner-researcher holds as integral is the amount of time and effort both she and the participants directed towards successful online performance: it is relevant to know how much meaningful time and how much meaningful effort were directed in the learning context to support the step-by-step process. Research studies hold that when participants meet more often with their teacher and/or amongst themselves, conduct more activities, receive additional feedback on their individual activity, they may, as a result, experience more academic success because of that (Chen, Whittinghill, & Kadlowec 2010; Calvani et al. 2010; Carmen & Haefner 2002; Freeman & Kenzie 2001).

The results show that in terms of research question one, 83% of the paired participants who worked online and 75% of the paired participants who worked using the traditional approach found their material on time. In terms of their tardiness, the sample noted insufficient common free time or inability to find suitable research material for the research paper that would satisfy both of them.

In terms of research question two, it was found from rubric two that the paired participants who belonged to the experimental group came online often to discuss their work-in-progress and developed their online assignment within the appropriate time interval resulting in 72 % performance success whereas the pair-work developed by the participants who worked in the traditional paper-and-pencil fashion arrived at a success rate of 73 %. Online collaborating gave the participants an opportunity to share their thoughts, challenge one another, reflect on the research work, and arrive at conclusions as synergistically as those in the traditional group.

In short, the results drawn from the case study serve to illustrate that the paired online participants were relatively digitized; they had embraced technology shown by their timely retrieval of online material, processing of the business assignment online, and successful completion of the business assignment.

Conclusion

It can be concluded that in the case study the paired online participants were excited to be conducting their business research paper as digital natives; they actively worked together as pairs to select the business-related documents online, to develop the assignment together using the virtual classroom; to check with their teacher concerning the quality of the research in progress; and, finally, to ensure that the completed research paper met the defined stipulations. "We learned so much in this project; it was so different from what we've done before!" The participants held that there was meaningful integration of technology because their teacher knew when, where, and how specific tools should be used to facilitate overall learning. It required knowing how to plan and select the optimal application tools in addition to knowing how to implement them and evaluate their effectiveness, a finding noted by other researchers (Lowes 2011; Collins & Halverson 2009; Newby et al. 2006).

Limitations were met in the research study. The sample was a convenience one, opted for as it allowed the practitioner-researcher to control the research conducted at her discretion. The participants were relatively homogeneous in terms of age, gender, and nationality, composed as it was of local undergraduate business students. Coming from the same educational background may mean that the participants may have had a similar attitude towards using educational technology. Another limitations met in this case study was the sample size, the teaching semester selected, the inexperience the undergraduate-level business students may have had in dealing with the university's Course Management System. In addition, the participants may have had in common their resistance to using on-line communication may be stemming from their academic history, fear of incompetence, unwillingness to learn, social economic status, access to the internet, and/or work commitments.

Given these limitations, I recommend that students use more IT in academia. Today's assimilation and prominence of the internet in daily life spawning with it its array of tools from texting, to e-mail, to virtual worlds has colored excitement about the opportunities and threats of the quality of online teaching and learning. This case proved that technology may be seen as shrinking distance, expanding networks and interdependencies between students and student-to-teacher, a rich context in which both the students and the teacher were able to thrive when tools, methods, principles and structures were tactically geared and receptive to change, when technology was coupled with knowledge management in a step-by-step manner.

In short, as the practitioner-researcher, I firmly believe that a good portion of students' educational achievement lies in the educator's mindset, one that ought to ultimately be searching for teaching strategies, tactics, and tools to help attain her/his students' goals. As such, I hold that educators carry a heavy load of responsibility. If they hold their students' personal sense of achievement as integral, then they will continuously update their repertoire of knowledge and knowledge management to allow for a wider range of interactional, instructional, and assessment practices that integrate educational technology by reengineering the classroom, transferring and sharing knowledge as a portfolio of student success (Curtis & Zheng 2009; Bates 2005; Gibbs 2006; Lynch 2002).

Innovators and creators of information technology note that the ultimate value in technology investment is in its capacity to leverage the reinvention of processes (Norris, Mason, & Lefrere 2003). When new types of designed learning environments are truly integrated into the education context, it validates that business students are successful digital natives. Such success represents increased certainty in students' capacity to internalize educational technology and both innovate and improve the quality of their performance. Indeed, as a strong adherent of educational technology, I hold that digitization is born in our learning culture, but it needs time to grow. This case study proved that many of the undergraduate business students embraced a new online methodology of conducting business research. "Next Semester, Dr. we will take a course with you and learn more about how to use technology in business." To conclude, investing IT in Business students gives meaning to walking that extra mile.

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