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Blended learning in higher education: A study of a graduate school of business, Trinidad and Tobago

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This study looks at the experiences of postgraduate students moving from the traditional face-to-face delivery mode to a blended mode. In the blended mode, parts of the academic delivery occur using the online platform at the Graduate School of Business, Trinidad and Tobago. The majority of students favoured moving to a blended mode because of the flexibility and convenience that the online component brings. Students, however, expressed the view that the interaction with peers and networking opportunities were critical aspects of postgraduate education in management and they, therefore, preferred a blend in the programme where at least 50% of the programme is offered through traditional classroom delivery. The findings also revealed that the extent of enjoyment in working in the online environment was related to the age of the student, the clarity of the online materials, and students' comfort with the Learning Management System (LMS).

Keywords: student experiences, blended learning, graduate education, e-learning

Introduction

The Graduate School of Business was established 22 years ago and it is dedicated to providing postgraduate business education. All of its programmes are on a part-time basis and geared towards adult learners. The school has taken a policy decision to deliver most of its courses and workshops using a blend of online and face-to-face methods. While administrators and faculty perceive this to be a move in the right direction, there is no empirical evidence on how the students feel about this and what measure of blend they would prefer.

In today's competitive environment, schools need to be fully cognizant of the views and feelings of their primary stakeholders – the students. Given the fact that the students are at the centre of this process, it is imperative that their views on their experiences be obtained before contemplating any shift from the traditional face-to-face modality to blended learning. Failure to appreciate the views and feelings of students could result in the lowering of satisfaction. This research is, therefore, of paramount importance as the school moves towards changing its delivery method to include a component of online delivery. Knowing how students feel about this move, the challenges that they anticipate and the measure of blended learning preference would go a long way in ensuring that support mechanisms are instituted and courses and workshops are optimally designed and structured.

Decisions on the balance between the two modes of delivery must also be given serious consideration. It must be noted that the studies conducted on students' views and experiences of blended learning have mostly been done in the Far East, Western Europe and North America. There are very limited studies on e-learning in the Caribbean and the studies that have been undertaken have focused mainly on technical pedagogical design and faculty development (Waldron, 2009; Ragbir and Mohan, 2009; Kistow, 2009).

In the Caribbean, The University of the West Indies has been at the forefront in pioneering the delivery of online education programmes with the establishment of the University of the West Indies Distance Education Programme (UWIDEC) in 2002. UWIDEC became the University's Open Campus, which now stands alongside the three other main campuses in Trinidad, Jamaica and Barbados. An affiliated school, the Graduate School of Business, has also established an e-learning platform and has started to incorporate the use of online methods to aid in its delivery of courses and workshops.

Literature review

One area that has experienced phenomenal changes as a result of the use of Internet technology is the area of education. The concept of e-learning is facilitating the teaching and learning experience using new channels and technologies. Researchers have attempted to define and explain the concept of e-learning. Carry and Willis (2001) broadly define e-learning as any form of learning that utilizes a computer or technological network for delivery, interaction or facilitation. Becker (1991) opines that e-learning covers a wider set of applications and processes, which include web-based learning and virtual classrooms. With the ability of the Internet to bridge time and space, and the advancement in technology, e-learning has the potential to continuously break some of its own barriers. Digital educational delivery knows few, if any, boundaries. E-Learning has the ability to bridge cultures and create avenues for new ways of thinking which is important when introducing a new learning technology into any cultural context (Jamlan, 2004).

There are several cogent reasons for adopting and implementing e-learning into an educational system:

1. **The growth of information technology:** e-learning has become an ideal delivery vehicle for education and learning.
2. **It is information rich:** e-learning offers both teachers and learners access to anywhere, anytime "information rich" resources.
3. **Alternative learning strategy:** e-learning can reach those previously denied access (e.g., students with physical disabilities).
4. **Blended learning:** e-learning can augment traditional classroom offerings, thereby freeing up valuable resources and

expanding the offerings to greater numbers of campus-based students (Spender, 2001).

With blended learning environments, faculties design programs and courses to mix and match the two teaching modalities. According to Newman (*undated*), blended learning programmes hold the promise of combining the best of online instruction and face-to-face instruction. While this area of research is in its infancy, a safe assumption is that faculty will look to use the blended approach so as to take advantage of the best pedagogical techniques of online and face-to-face learning. Singh and Reed (2001) see blended learning as a learning programme where more than one delivery mode is being implemented for optimization of learning outcome and cost. Garrison and Vaughn (2008) describe the basic principle of blended learning as a situation where face-to-face oral communication and the online written communication are optimally integrated so that the strengths of each are blended into a unique learning experience congruent with the context and intended educational purpose. Also, blended programmes are seen as enhancing faculty and student satisfaction through a more efficient use of learning time (Bourne & Seaman, 2005) by reducing commute times.

At the Sloan-C Workshop on blended learning, Laster et al (2005) defined blended learning as courses that integrate online with traditional face-to-face class activities in a planned, pedagogically valuable manner; and where a portion (institutionally defined) of face-to-face time is replaced by online activity. Balic and Soren (2009) contend that blended learning is not a question of combining different education systems to create a new education method. They believe instead that the two approaches should be combined in harmony and balance so as to raise the level of education quality. Clark and Meyer (2003) see blended learning as a kind of education method which combines diverse education models and takes advantage from every sort of technology, yet they indicate that it may have different meanings to different people. Among the various definitions of blended learning, there are particular common concepts. Graham, Allen and Ure (2003) extrapolate the most common of them as: combination of instructional modalities, combination of instructional methods, combination of online and face-to-face instruction.

Generally, researchers tend to accentuate the third concept instead of the first two in developing working definitions of blended learning. The third concept highlights the combination of two different, historically separate education methods and is the area that has attracted considerable attention from researchers when it comes to blended learning (Bonk & Graham, 2006). In this regard, two central questions that must be addressed in designing any blended programme are:

- What is the optimal balance between online and face-to-face instruction? (Christensen, 2003)
- What is the appropriate delivery media? (Hoffman, 2006)

Studies have shown that students enjoy the blended learning experience (Akkoyunlu & Soylu, 2006 & 2008; Balci & Soran, 2009) and that students in higher level academic work do not want to continue their education only in the traditional face-to-face learning environments nor do they want a purely online learning environment. They would like to meet and discuss the course content with their instructors and peers, but would like to use information technology as a learning tool as well (Orhan, 2008).

It is important, therefore, to establish some level of balance between the face-to-face delivery and delivery in the online environments, in view of the advantages and drawbacks of both methods. Hienze and Proctor (2003) argue that the online environment has a major disadvantage in that there is a lack of social interaction which is taken as a given in the traditional environment. According to Salmon (2002) this creates a situation where the less independent student may suffer a lack of motivation, which they usually obtain from the social interaction and connections. To this end, Rogers (2001) suggests that the institution be mindful of the compromise or blend between the online and the face-to-face component. Ostguthorpe and Graham (2003) see factors such as instructional objectives, the characteristics of students, the condition of online resources and the experience of trainers as critical in creating balance between the face-to-face and online approaches.

McCampell (2001) emphasizes that blended learning will be a suitable approach for incorporating online applications into an existing course programme for the first time, but at the same time keeping some interaction. He goes on to highlight that some parts of the course content should be transferred to the online environment (e.g., forum, e-mail, web environment) without offering the whole courses online, as this could affect students' performance and satisfaction. Ginns and Ellis (2006) argue that there are many drivers that encourage the infusion of information and communications technology (ICT) into the student experience, namely, the increased flexibility it brings for students who need to balance studies and family commitments. A course in the blended mode allows students to incorporate modern communication and collaboration techniques while providing access to an increasing body of knowledge via online libraries and websites. In the same vein, Bonk and Graham (2006) see the blended learning format as helpful in reducing travel time and having great potential in the area of executive training.

Today's students have fundamentally different ways of approaching knowledge acquisition, problem solving, and operating in the workforce (Orhan, 2008). In a study of generational values and education, Oblinger (2003) concluded that based on the generational norms of Generation X (born between 1965 and 1980), blended learning offers a mechanism for meeting their needs within the value system that they embrace. Milne (2007) contends that this generation would not first associate cut and paste with scissors and glue and for them the digital camera always existed. As such, he argues that the learning space must be designed to accommodate the technological orientations of this generation.

While many of the students who are now in the full time university system fall within Generation X, this may not be so for tertiary institutions offering postgraduate qualifications, where students are usually seen as being adult learners. Knowles et al (1998) proposed the adult learning theory called Andragogy. This theory is based on a number of assumptions of the adult learner. According to their assumptions the adult learner is usually self directed, brings a wealth of life experiences to enrich the learning process, and is motivated to learn to the extent that the learning would help him/her to better cope with life situations. In a similar vein, Brookfield (1995) contends that the adult learner is a self motivated and experiential learner. He further asserts that adults undertake critical reflections as part of the process and that once they have acquired the skill of learning they can become lifelong learners. Social constructivist theorist Vygotsky (1978) emphasizes the importance of the social context of learning. For him the need for social interaction with people, including other learners and teachers, are key factors in cognitive development.

Adult learners are usually older, employed, have dependents and may have interrupted their education (Huang, 2002). Lieb (1999) argues that because of these responsibilities the adult learner needs to be highly motivated. They also require positive reinforcement from instructors and materials must be presented them in a well structured manner. Moore and Kearsley (1996) contend that most distance education students are adults between the ages of 25 and 50. Given the fact that online technology is a fairly recent phenomenon in education, most adults and instructors would have been educated in the traditional classroom and they would need to adapt to this new mode (Cercone, 2008). In designing online and blended programmes schools should cater to the specific learner characteristics of the adult learner and create opportunities for experiential learning, reflection and interaction so that distance learning programmes can be better structured in terms of the material and support provident to students.

While blended courses contain less web instructions than fully online courses, they require a similar level of support as on-campus labs and virtual students' support mechanisms such as learner aids and online help-desk services (Dziuban, Moskal, Hartman, 2004). Ginns and Ellis (2006) in a study of third and fourth year students in Veterinary Science in Australia found that in teaching in the blended learning contexts, there is a need to focus not only on the technical capacities and functions of online materials and activities, but one must also seek to understand the students' perceptions of this part of the learning environment, and the extent of support students receive. Hara and Kling (2001) found that while the feeling of isolation was a source of stress for students, a more significant source of stress was caused by confusion, anxiety, and frustration due to the perceived lack of prompt or clear feedback from the instructor, and from ambiguous instructions on the course website.

As the Graduate School of Business moves to increase its blended offering to students they would need to consider the peculiar characteristics of the adult student in designing its blended programmes. To this end, the aim of this study is

to determine students' experiences using the school's e-learning platform, which facilitates the blended approach. More specifically, the research seeks to answer the following questions:

1. How do students' views on blended learning differ across academic programmes and demography?
2. What challenges do students experience while working in the online environment?
3. What support mechanisms would the school need to institute?
4. What measure of blended learning between online delivery and face-to-face delivery would students prefer?

Methodology

The data for this study was collected via a survey instrument administered to students in four academic programmes done at the master's level at the Graduate School of Business in Trinidad and Tobago. This included two courses, namely Accounting and Statistics, which are offered using a blended approach. The survey instrument was a questionnaire divided into three sections. The first section asked questions about the programme in which the students are enrolled and the students' background, such as their age, level in their organization, and whether this was their first time working in an online environment. The second section asked a series of question on a 5-point Likert scale (i.e. 1 = strongly disagree and 5 = strongly agree) to elicit students' views and experiences in working in the blended environment. They were also asked to choose what measure of blend they would prefer for other courses and workshops, ranging from 100% online to 100% face-to-face. The third and final section asked students to give their opinions on the advantage and drawbacks of working the blended environment and their suggestions for improving the online environment.

The questionnaire was administered to students who had done courses or workshops in their respective programmes, using the school's e-learning platform. Given this criterion of having experienced the e-learning platform at the school, the sampling frame consisted of approximately 150 students across four academic programmes offered by the school as follows: Executive Master in Business Administration (EMBA), International Master in Business Administration (IMBA), Master in Human Resources (MHRM) and the Master in Marketing (MM).

The students' profiles and needs vary across these various masters programmes. The EMBA programme is geared towards persons who have considerable working experience and they are usually in senior managerial positions in their organizations. The IMBA caters for persons with less work experience who are either in middle management or aspiring towards senior management positions. The MHRM and MM programmes allow persons to specialize in the areas of Human Resource Management and Marketing respectively. With the exception of the marketing programme, which requires no work experience, all the other programmes stipulate at least two years relevant work experience.

As per the requirements, all of these students did a course or workshop during the period September 2009 to March 2010 which had varying measures of blending online and face-to-face delivery methods. The students in the EMBA, IMBA and MHRM programmes did a workshop and a course in Accounting using the online platform. The workshop served to prepare the student for the course and was done in the two-week period prior to the beginning of the course. For the workshop, the students were given an initial face-to-face briefing of the nature of the material to be covered and the assessments to be done. They then completed the workshop in the ensuing 14 days with online tutor support available to deal with any questions or clarifications. The online materials were mainly PowerPoint presentations, with some multimedia support and worked examples. The assessment consisted of two online quizzes and a comprehensive question which was uploaded to the course page. These were marked and feedback given to the students in the online environment. The course that followed was done with a blend of face-to-face and online delivery methods with emphasis on face-to-face sessions. The online dimension included discussion forums, online quizzes, multimedia lecture presentations and submission of course assignment. The online component accounted for 25% of the course hours.

The MM students, however, had a slightly different experience. They had a ten-week Statistics course with little face-to-face sessions. They were also given an initial briefing before starting the workshop and had online tutor support to deal with queries and questions. They had three online quizzes as assessment during the third, seventh and ninth weeks of the workshop. They received online feedback on each quiz and were allowed to retake it if they did not perform well. During the time of the workshop, they met face-to-face to deal with any concerns they may have had as a result of working in the online environment. At the same time, they did a separate course using a blended format similar to that of the accounting course described earlier, again with the online component accounting for 25% of the course time. As such, the students experienced courses on both end of the blended spectrum.

In order to ensure representation across these programmes, a stratified random sampling method was used. The data was collected during the period January to April 2010 as different students groups had a different timing for courses and workshops. Students were given the questionnaire, which took approximately 10 minutes to complete, during one of their classroom sessions where it was completed during the class and returned to the academic officers.

Findings and discussion

One hundred and fifty students were targeted for the study. A total of 115 surveys were returned, nine of which were rejected. The remaining 106 surveys represent a response rate of approximately 71%. Of the 106 respondents, 50% were from the IMBA programme (n = 53), 23% were from the EMBA programme (n = 24), 17% were from the MHRM programme (n = 18) and 10% were from the MM programme.

It is noted that this was consistent with their proportions in the sampling frame. In terms of their level in the organization, 40% were at the executive level, 40% were at the middle management level and 20% were at the operational level. Fifty-eight percent of the respondents had previous experience with online learning.

As shown in Figure 1, 54% of the respondents were over the age of 40. A total of 32% fell between the ages of 41 to 45, while 22% were over 45. This age breakdown is reflective and consistent with the level of the position held by the respondents in their organizations. This age breakdown is also a clear indication that the design and structure of any online component must be consistent with the theories and practice of educational delivery to adults as discussed earlier.

Students generally said that they enjoyed working in the online environment. However, the large standard deviation suggests some variations in the level of enjoyment in working in the online environment. Likewise, students' views on the clarity of material and the level of technical and administrative support showed similar means but equally large standard deviations. As noted by Dziuban et al (2004) and Ginns and Ellis (2007), blended programmes require similar levels of support as on-campus labs and virtual students' support mechanism such as learner aids and online help-desk services. This is especially important as the age breakdown shows that the students fall outside of the generation considered technology savvy. An analysis of the students' comments in the third section of the survey helped to explain some of these means and variations. Students cited the convenience and flexibility of the online component as major advantages of the blended programme. However, a great majority cited the need for peer interaction and class discussion as a vital part in the learning process. In a programme such as the MBA, however, great emphasis is placed on the interaction with peers and on the sharing of experiences, ideas and opportunities for networking. As suggested by Thornam and Phillips (2001), blended programmes need to have a fair degree of interactivity so as to ensure students' satisfaction and to motivate the less independent (Salmon, 2002). The importance of interaction among students could be a reason that the level a person is in the organization did not figure as a significant factor in preference for blended learning. The findings showed that respondents at all levels in their organization place a great value on in-class interaction, peer discussion and networking. While busy executives favour the convenience and flexibility of the online component, they still want their MBA programme to have a fair degree of interaction. Consistent with Rogers (2001), this indicates the need for balancing the blended learning mode.
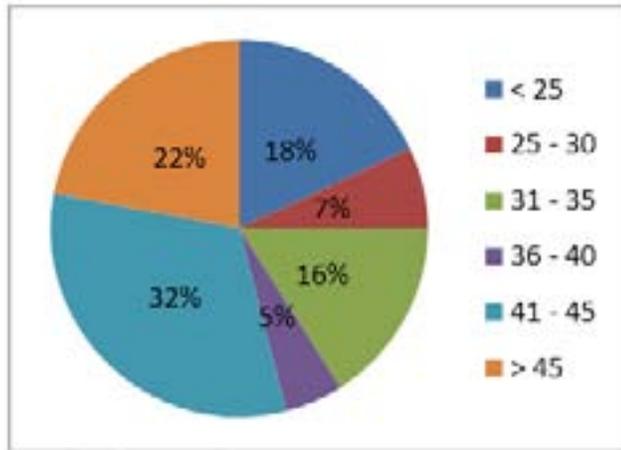
Figure 1. Breakdown by age.

It was found from Chi-square analysis, that the extent of enjoyment in working in the online environment (Table 1) was significantly dependent ($p < .05$) on whether students found that the online material was clear and well structured, the level of training in using the e-learning platform and the age of the student. Consistent with the observation of Hara and Kling (2001) and Ostguthorpe and Graham (2003), the clarity and structure of the online material have implications, not only for the content and presentation of the material, but also for the choice of courses to which the blended mode would be applied and the competence of the faculty facilitating the blended course. In this study, the nature of the courses was numerical and this tends to be more difficult to represent and explain in the online environment. In such cases, supplementing the course material with enhanced multimedia presentations such as podcasts, narrated slides and video presentations may be advisable. However, when implementing these strategies, especially in developing countries, one needs to be mindful of the available bandwidth. If bandwidth performance is problematic, online tutor support would be a more feasible option.

Students must be trained to use the online software through which they access their courses. The other significant factor is the age of the student. This cannot be overemphasized, especially for institutions of higher education, where most of the learners are 40 and over. As observed by the Oblinger (2003) study, this age category is not the techno-savvy group. However, Tweedell (2000) maintains that many adults want to take advantage of online learning environments primarily because of their busy schedules and the online format's convenience. They use technology with different sets of expectations, based on their personal histories, and they need positive reinforcement and feedback to help them navigate the learning space. Institutions need to be mindful of this and use this new motivation to ensure that this group is comfortable with the technology. Therefore, training should be hands-on and should not emphasize the online environment in the early

stages since that is where the barrier to technology exists. As time goes by, both learners and instructors should adapt and change as they learn how to use the new medium.

When confronted with the preference of moving courses and workshops delivered using the blended mode, a mean of 3.03 and a standard deviation of 1.307 suggest a cautious willingness. Chi-square analysis revealed the preference to move to a blended approach differed significantly among the programmes in which the student was enrolled.

As can be seen from Table 2, the MM students seem to be the least certain of the blended mode. Students' comments suggest some reasons for their perceived skepticism. The marketing programme is the only programme that accepts students without work experience and so they place great value on classroom interaction and networking. Also, the blended workshop that they experienced was of a mathematical nature and not linked directly to a follow up course. An examination of the students' profiles revealed that they were less mathematically inclined and they expressed a greater need for hands-on explanations. This suggests that more tutor support, especially for the longer workshop, may be required. It is noted that these students did not request classroom time to supplement the online material but rather prefer that the materials offer more explanations, such as greater use of multimedia presentations. Consistent with the reasoning of McCampell (2001) and Ostguthorpe and Graham (2003), we need to be mindful of the students' profiles and the choice of programmes that are blended. It is noted however, that the marketing group was small (n = 11) and further studies with a larger group should be undertaken before any generalization can be made.

Table 1. Working in the online environment.

	Enjoyed working	Materials Clear	Need to train in the LMS	Technical support needed	Administrative support Needed	Would like blended learning
N	106	106	106	106	106	106
Mean	3.68	3.79	2.44	3.07	3.14	3.08
Median	4.00	4.00	2.00	3.00	3.00	3.00
Std. Dev.	1.176	1.152	1.332	1.165	1.116	1.307

N = Sample Size; Std. Dev = Standard Deviation

Table 2. Moving to a blended learning environment by programme.

	N	Mean	Std. Deviation
HR	18	3.56	1.294
EMBA	24	3.50	0.978
Marketing	11	2.00	1.265
IMBA	53	2.94	1.322
Total	106	3.08	1.307

The IMBA students are also an interesting group. This was the only group that did not have a course or workshop in the first semester of their MBA programme. The mean of 2.94 suggests that the group was generally in favour of using a mixed mode of delivery, but the standard deviation shows there is much variation in the score and it is less than the overall average. An area of future research could be to test whether students' enthusiasm is affected when the blended mode is introduced into a programme, either at the very start or after the first semester. This could have implications for how students are oriented into a programme.

When it came to the critical issue of choosing a preferred measure of blend, the results showed that most students at the Graduate School of Business preferred a blend with a bias towards the face-to-face delivery. Fifty-two percent of the students chose a blend of 25% online and 75% face-to-face; 24% opted for a 50-50 blend; and 14% preferred 75% online. Significantly, only 11% of the students chose no blend, with 8% opting for total face-to-face and 3% voting for total online. As was reported by Akkoyunlu and Soylu (2006 and 2008), Orhen (2008) and Balci and Soran (2009), students do not want to continue their education with only traditional face-to-face learning environments or with a purely online learning environment and adult learners want the benefits of the online environment (Tweedell, 2000). They prefer to have the best of both worlds by having meaningful interaction with their instructors and colleagues, but would also like to use information technology as a learning tool. As such, consistent with the observation of Milne (2007) the learning space must be designed to accommodate this. Moreover, the fact that the choice of the blend is skewed towards more face-to face delivery suggests that the adult learner profile fits with a preference to social interaction (Vygotsky, 1978) and experiential learning (Knowles, 1990; Brookfield, 1995).

This result indicates that institutions must be cognizant of the differences in students' profiles and must take the unique preferences into consideration when designing and implementing blended programmes. To this end, when embarking on a blended programme, it is important that students be properly informed about the blended component and that their questions and fears should be allayed through communication, support and training. It should be made clear that the blended component would not significantly affect interaction with their peers if this is a concern. Teaching, technical and support staff should be fully involved in the process of moving to the blended environment and should be trained to use

the LMS. The buy-in from academic staff is critical for any blended programme to succeed (Kistow, 2009; Jamlan, 2004).

Conclusion

While the concept of blended learning is new to the adult learner the results indicate that persons pursuing higher education in the area of management are open to the idea of integrating technology into course delivery. However, the results show that it is very important for postgraduate students to interact with their peers and engage in classroom discussion. Higher education institutions must understand the needs and preferences of their students in the design of blended learning programmes. The results also indicate the need for clarity in the structure of online materials, training in the use of the LMS, and the age of the student groups involved.

Further research needs to be conducted to assess the impact of the blended design on learning styles, course type and student personality. Also the area of students' motivation in working in the online environment within the context of the Caribbean learner would make for an interesting study.

As the pace of technology increases and more and better mediums become available, schools would be able to implement better and more efficient techniques to overcome some of the shortcoming of blended delivery. Given that in the area of management studies students place a high premium on classroom discussion, peer interaction and networking, there would always be a preference for a fair measure of face-to-face sessions in the foreseeable future.

References

Akkoyunlu, B. & Soylu, M. Y. (2006). A study of student's perceptions in a blended learning environment, *Turkish Online Journal of Distance Education, 7*(3), 43–56.

Akkoyunlu, B. & Soylu, M. Y. (2008). A study of student's perceptions in a blended learning environment based on different learning styles. *Educational Technology & Society, 11*(1), 183–193.

Allen, I. E., & Seaman, J. (2005). Growing by degrees: Online education in the United States, 2005. Newburyport, MA: The Sloan Consortium. Retrieved January 05, 2012 from http://sloanconsortium.org/publications/survey/growing_by_degrees_2005

Ki, K.J. and Bonk, C.J. (1999-2012). The Future of online teaching and learning in higher education: The survey says.. . *Educause Quarterly* November, 23–38.

Banci M & Soren H. (2008). Students' opinion on blended learning. *Turkish Online Journal of Distance Education, 10*(1), 21–35.

Becker, P. (1991). When powerful tools meet conventional beliefs and institutional constraints. *Computing Teacher, 18*(8), 6–9.

Bonk C. J. & Graham, C. R. (2006). *Handbook of blended learning: Global perspectives, local designs.* San Francisco, CA: Pfeiffer Publishing.

Brookfield, S. (1995). *Adult learning: An overview.* Retrieved September 21, 2011 from http://nlu.nl.edu/ace/Resources/Documents/AdultLearning.html

Carry, D & Willis, J. (2001). *Technology and teacher education.* Charlottesville, VA: Association of Advancement of Computing in Education

Cercone, K. (2008). Characteristics of adult learners with implications for online learning design. *AACE Journal, 16*(2), 137–159.

Christensen, K. T. (2003). CASE 1 finding the balance: Constructivist pedagogy in a blended course. *Quarterly Review of Distance Education 4*(3), 235–243.

Clark, R. T. & Meyer, R. E. (2003). *E-learning and the science of instruction.* San Francisco, CA: Preiffer Publishing.

Cooper, L. W. (2001). A comparison of online and traditional computer application classes. *Technological Horizons in Education Journal, 28*(8), 52–58.

Dziuban, C. D., Hartman, J. L. & Moskal, P. D. (2004). *Blended Learning. Educause Center for Applied Research. Research.* Bulletin, 7.   Retrieved April 4 2011 from http://www.educause.edu/ir/library/pdf/ERB0407.pdf.

Garrison, D. R., & Vaughan, N. D. (2008). *Blended Learning in Higher Education, Framework, Principles, and Guidelines.* San Francisco: Jossey-Bass.

Ginns, P & Ellis R. (2007). Quality in blended learning: exploring the relationships between on-line and face-to-face teaching and learning. *Internet and Higher Education, 10*, 53–64.

Graham, C.R. Allen, S. & Ure, D. (2008). *Blended Learning Environments: A Review of the Research Literature.* Unpublished manuscript, Provo, UT.

Hara, N. & Kling, R. (2001). Student distress in web-based distance education. *Educause Quarterly, 3*, 68–69.

Hoffman, J. (2006). Why Blended Learning hasn't (yet) Fulfilled its Promises: Answers to Those Questions That Keep you up at Night", In Bonk C. J. & Graham, C. R. *The Handbook of Blended Learning: Global Perspectives, Local Designs.* San Francisco: Pfeiffer.

Heinze, A. & Proctor C. (2003) *Reflections on the use of blended learning.* Unpublished. Retrieved April 12, 2011 from http://usir.salford.ac.uk/1658/1/4247745025H__CP_-_paper9_5.pdf

Huang, H. (2002). Toward Constructivism for Adult Learners in Online Learning Environments. *British Jourrnal of Educational Technology, 33*(1), 27–37.

Jamlan, M. (2004). Faculty opinion toward introducing e-learning at the University of Bahrain. *The International Review of Research in Open and Distance Learning, 5*(2). Retrieved February 20, 2009 from http://www.irrodl.org/index.php/irrodl/article/view/185/267

Kistow, B. (2009). E-learning at the Arthur Lokjack Graduate School of Business – a survey of faculty members. *International Journal of Education and Development using ICT. 5*(4). Retrieved April 4, 2011 from http://ijedict.dec.uwi.edu/viewarticle.php?id=845

Knowles, M., Holton, E. and Swanson, R. (1998) *The Adult Learner: A Neglected Species*, fifth edn, Houston: Gulf Publishers.

Laster, S. Otte, G., Picciano, A.G. & Sorg, S. (2005) *Redefining blended learning.* Presentation at the 2005 Sloan-C Workshop on Blended Learning, Chicago, IL.

Mason, M. (2001). *Globalising education: trend and applications.* London: Routledge.

McCampbell, B. (2001). Blending the basics. *Principal Leadership.* September, 71–73.

Milne, A. (2007). Designing blended learning space to the students' experience. In Oblinger, D. G. (Ed.), *Learning spaces.* Boulder, CO: Educause.

Oblinger, D. (2003). Boomers, gen-xers and millennials: understanding the new student. *EDUCAUSE Review, 38*(4), 37–47. Retrieved April 7, 2011 from http://net.educause.edu/ir/library/pdf/erm0342.pdf

Orhan, R. (2008). Redesigning a course for blended learning environment. *Turkish Online Journal of Distance Education, 9*(1).

Osguthorpe, R. T. & Graham, C. R. (2003). Blended learning environments: definitions and directions. *Quarterly Review of Distance Education, 4*(3), 227–233.

Ragbir, D. & Mohan, P. (2009). Creating reusable lesson plans for E-learning using the IMS learning design specification. *International Journal of Education and Development using ICT. 5*(4). Retrieved April 7, 2011 from http://ijedict.dec.uwi.edu/viewarticle.php?id=852

Rogers, P. L. (2001). Traditions to transformations: the forced evolution of higher education. *Educational Technology Review, 9*(1).

Salmon, G. (2002). *E-Tivities: the key to active online learning.* London: Kogan Page Limited.

Singh, H. & Reed, C. (2001) *A white paper: achieving success with blended learning.* Retrieved March 12, 2011 from http://www.centra.com/download/whitepapers/blendedlearning.pdf.

Spender, D. (2001). *E-Learning: are universities prepared? online learning in a borderless market.* Conference proceedings at a conference held at Griffiths University Gold Coast Campus. Canberra: Department of Education, Training and Youth Affairs, 59–63

Tweedell, C.B. (2000). *A theory of adult learning and implications for practice.* Paper presented at the meeting of the Midwest Educational Research Association Annual Meeting. Chicago, IL. [Soft Break]Urdan, T & Weggen, C. (2000). Corporate e-learning exploring. a new frontier. *Computer News, 53*(11), 35–36.

Vygotsky, L.S. (1978). *Mind in society.* Cambridge: Harvard University Press.

Waldron, L (2009). Technology-oriented or learning-driven? *International Journal of Education and Development using ICT. 5*(4). Retrieved March 24, 2011 from http://ijedict.dec.uwi.edu/viewarticle.php?id=870