

**GEORGIA BUSINESS EDUCATION
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**REPRESENTING, SUPPORTING, AND PROVIDING QUALITY
EDUCATION, INSTRUCTION, AND SUPPORT FOR AND ABOUT
BUSINESS**

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GEORGIA BUSINESS EDUCATION ASSOCIATION

Vision and Mission

Vision

The Georgia Business Education Association is the foremost professional organization that represents education for/about business, supports instruction for preparing individuals to function effectively within the global and competitive economy, and provides leadership for the direction of business education

Mission

The Georgia Business Education Association serves individuals and groups involved in instruction, administration, research, and dissemination of information for/about business at all instructional levels as they successfully accomplish the following purposes of business education:

- Prepare individuals to be knowledgeable and ethical decision makers in their roles as consumers, workers, and citizens in our economic system
- Prepare individuals to understand the role and structure of business in our global and competitive economy
- Prepare individuals to manage personal business affairs
- Develop and refine communications, analytical, computational, and technological skills necessary for business and economic applications
- Provide opportunities for leadership development including, but not limited to membership in GBEA, SBEA, NBEA, ACTE, and GACTE
- Develop a personal commitment to lifelong learning
- Prepare students for leadership roles through activities of the Future Business Leaders of America and Phi Beta Lambda, and NBEA
- Recognize outstanding business educators and students
- Obtain legislative support for business education programs

LETTER FROM THE PRESIDENT

Spring 2010

Fellow GBEA Members:

Thank you for taking time to read this year's *GBEA Journal*. I am sure that the information you find contained in these pages will be informative, thought-provoking, and enlightening. I also want to extend a thank you to the authors of these articles for their help in making the *GBEA Journal* possible.

Now more than ever, we must help fight the battle that teachers are facing across the nation. With budget and program cuts, it is very important that your voice be heard. Please contact your elected representatives and encourage them to fully fund education.

Each and every day, you touch the lives of young people all across the state. I thank you for what you do in your classroom, with your FBLA/PBL program(s), and with your community. Without each of you, we would not have quality Business and Computer Science education programs across the state of Georgia.

I hope that you enjoy this edition of the *GBEA Journal*. I will see you this summer at the 2010 GACTE Conference in July.

Best,

J. Dustin Davis, President

Georgia Business Education Association

LETTER FROM THE EDITOR

It has been a rewarding experience to serve as editor for the Georgia Business Education Association Journal. This year, the journal experienced several changes in format and the way in which articles were reviewed.

A national board of reviewers were selected. They represented business education from across the country, including our own State of Georgia, and from a variety of educational contexts. The journal format, changed with the edition of an abstract that summarized each of the published articles.

The journal would not have been possible without a commitment to the dissemination of quality business education literature by the manuscripts authors, as well as, the distinguished panel of reviewers.

As business education continues to transform itself, many more changes will come our way. I look forward to the transformation of business education and hope you too will join in as we blaze the path to student success.

Best wishes,

Dr. Frederick W. Polkinghorne, Editor

PANEL OF REVIEWERS

Dr. Julie Chadd Associate Professor Eastern Illinois University School of Technology Charleston, Illinois 61920	Dr. Nancy Hite Professor Emporia State University School of Business Emporia, Kansas 66801	Dr. Kathryn E. Hyatt Assistant Professor Reinhardt College McCamish School of Business Waleska, Georgia 30183
Dr. Allen Truell Professor Ball State University Miller College of Business Muncie, Indiana 47306	Dr. Nathalis Wamba Associate Professor Queen's College of New York Division of Education Flushing, New York 11367	

GEORGIA BUSINESS EDUCATION ASSOCIATION

Call for Manuscripts: 2011 Edition

The Georgia Business Education Association (GBEA) invites business educators and related subject-matter experts, to submit original manuscripts for publication consideration in the annual peer-reviewed Georgia Business Education Association Journal.

Potential authors are strongly encouraged to submit manuscripts about topics of interest to business educators at elementary , middle, and/or secondary schools; technical, two-year, and four-year universities/colleges. Manuscripts focused on practical topics, including teaching tips, as well as theory and research papers will be reviewed by a team of reviewers from across the United States.

Manuscripts should not be in publication or under publication consideration by other journals, at the time of submission or print. **All manuscripts should be submitted in publish-ready form.**

Manuscript Submission Guidelines:

1. Send manuscripts, prepared in Microsoft Word 2007 or previous edition to the editor via email at: fwpolkinghorne@valdosta.edu
2. **Submit manuscripts in APA 6th edition format**, including:
 - a. Title Page— including name, position, place of employment, mailing address, and other relevant contact information
 - b. 150 word (or less) abstract
 - c. 1500 to 4000 words
 - d. Text should be double-spaced and formatted in 12pt. Times New Roman font
 - e. Essential tables and figures should be formatted according to APA guidelines

An independent review board will blind review all manuscripts, submitted for publication consideration. The editor reserves the right to edit all manuscripts accepted for publication.

Submission deadline is November 01, 2010. Accept notification will be before March 15, 2010. If the deadlines are problematic for potential author(s), they should immediately contact the editor.

Send manuscripts, via email to Dr. F. W. Polkinghorne (fwpolkinghorne@valdosta.edu).

Please contact the editor with other questions, as needed. He can be reached at 229-249-2778 or via email: fwpolkinghorne@valdosta.edu

BUSINESS EDUCATION SOFTWARE AIDS IN GRADUATION TEST REMEDICATION

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Abstract

The effectiveness of two business education software packages was investigated to determine their impact on student pass-rate on the Georgia High School Graduation Tests. In the first study, 19 academically at-risk students who previously failed one or more of the Georgia High School Graduation Tests were remediated using NovaNET™ educational software. Nine or 47% of the study participants passed the graduation tests by their second or third attempts. In the second study, 115 academically at-risk students were exposed to academic remediation via KeyTrain™ software for applied mathematics and reading. The experimental group, who received treatment with the KeyTrain™ software, were significantly more likely to pass the Georgia High School Graduation Tests than those in the control group. The research findings support the positive impact of some business education academic remediation software in assisting at-risk students in passing the Georgia High School Graduation Tests.

Educational reform and accountability have been sources of social and political controversy for decades. Since the 1960s, the Federal government has launched several education reform initiatives. The most recent legislation, which was signed into law by former President George W. Bush, was the 2001 No Child Left Behind Act (U.S. Department of Education, 2005). Reform was also reported to be needed to encourage increased student achievement in rigorous courses and develop skills necessary to succeed in today's competitive environment (Cohen, Finn, & Haycock, 2004).

The era of high-stakes testing for educational accountability has proven to be dramatic and controversial for a variety of reasons. In particular, a significant achievement gap existed between demographic subgroups in terms of their performance on high stakes tests (Amrein & Berliner, 2002). The gap had presented a very real problem for schools who struggled to meet the accountability goals set by their school district, state government, and federal government. In addition, the business community had also encouraged schools to improve the employability skills of their graduates.

As a result, computer software had been developed to remediate student academic skills in the business education classroom. The software was aimed at providing college and career advice and support to remediate skills and knowledge in the core academic subject areas.

Research indicated that failure to meet expectations on tests and school resulted in students with increased-levels of low self-esteem, higher drop out rates, and increased negative involvement in the legal system (The Annie E. Casey Foundation, 2000). Research also indicated there was a high correlation between retention, attrition and negative social behavior (Georgia Association of School Psychologists, 2003).

Research also indicates that deficiencies were improved via the use of computer-assisted instruction (CAI) as a remediation tool for at-risk students. Research on CAI indicated that the academic achievement of at-risk students increased. As a result, CAI software had become an interest to schools who struggled to meet Adequate Yearly Progress (AYP). The use of computer-assisted instruction provided educators with an innovative method of remediation that encouraged academically struggling students to improve their academic performance.

NovaNET™ is a software package designed, by Pearson Education Inc., to facilitate student self-study in language arts; mathematics; science; social studies; and among others; in which students work through a series of guided lessons. The lessons build on previously acquired knowledge by posing questions that were developed on a continuum that starts at easy and advances to complex.

KeyTrain™ is a commercially available computer software program designed by Thinking Media (2001) a division of SAI Interactive Inc. The software is similar to NovaNET™ in that it is self-guided and geared towards reviewing and remediating reading, mathematics, and analytical workplace skills. The implementation of the software yields a score profile and career recommendations.

Need for the Study

Many schools have been classified as “needs improvement” under current AYP definitions. Therefore, it has become imperative that successful strategies of academic remediation be located, so that students can increase their academic performance on standardized exams. Cotton (1991) reported that computer-assisted instruction had been particularly successful, in remediating the academic skills of at-risk students.

The manufacturers of NovaNET™ and KeyTrain™ claimed that their software was designed to align with the standards assessed by the Georgia High School Graduation Tests. However, little research has been conducted to determine the impact of the NovaNET™ and KeyTrain™ software on student success, in regards to passing the eleventh and twelfth grade student achievement tests in science, social studies, mathematics, and language arts; as measured by the Georgia High School Graduation Tests.

Purpose

The purposes of the study were to determine the impact of (a) NovaNET™ and (b) KeyTrain™ software on student performance, as measured by the Georgia High School Graduation Tests (GA DOE, 1999).

Research questions

Answers to the following questions were sought in the study:

1. What is the impact of the NovaNET™ software on student pass-rates on the Georgia High School Graduation Tests?
2. What is the impact of the KeyTrain™ software on student pass-rates on the Georgia High School Graduation Tests?

Methodology

Participants

One hundred and thirty-four students at a comprehensive central Georgia high school which had failed to make Adequate Yearly Progress as defined by the Georgia Department of Education via graduation test scores over the academic years which had spanned 2003-2006 participated in the study.

Procedures

Two groups were established for the study. Group 1 consisted of nineteen students who received academic remediation via the use of NovaNET™ academic remediation software. Group 2 included one hundred and fifteen students who were selected to participate in academic remediation via the use of the KeyTrain™ software.

Data were collected via analyzing the students' Georgia High School Graduation Tests pass-rate prior to and after being selected to participate in the study.

Data Collection

Data were collected via a pre- and post-test analysis of student pass rates on the Georgia High School Graduation Tests.

Findings

Research question #1: What is the impact of the NovaNET™ software on student pass-rates on the Georgia High School Graduation Tests?

At the beginning of the computer aided instruction, there were 34 sections of the Georgia High School Tests that had not been passed by the at-risk students. After the study, 14 of the 31 sections were successfully passed. Therefore a 45.16% overall success rate was established for those students who received academic remediation via the NovaNET™ software.

Research Question #2: What is the impact of the KeyTrain™ software on student pass-rates on the Georgia High School Graduation Tests?

One hundred and fifteen students were treated via the KeyTrain™ software for approximately 3—5 hours per week during the Spring 2006 academic semester. Of those students who were treated to the KeyTrain™ software, about 96% or 110 students passed the English/language arts section of the test, and about 94% or 108 students passed the mathematics portion of the test.

Participant scores on the Georgia High School Graduation Tests in two areas, (a) English/language arts and (b) mathematics, who participated in KeyTrain™ sections were compared to those in traditional test prep classes via a statistical t-test. The tests resulted in significant differences for those students treated via the software compared to those who received other

methods of instruction in (a) English/language arts $t(115) = 3.78, p < .05$ and (b) Mathematics $t(115) = 6.04, p < .05$.

Conclusion

The findings in this study revealed that the use of KeyTrain™ and NovaNET™ was likely responsible for the improvement of student academic performance, in regards to the Georgia High School Graduation Tests.

Data were compared via statistical t-test to determine the impact of the KeyTrain™ and NovaNET™ software on student pass-rates in regards to the Georgia High School Graduation Tests. Significant findings favored the use of the Computer Aided Instruction (CAI) methods compared to other test pre methods.

Further analysis resulted in the determination that about 96% of the students that received treatment via the KeyTrain™ software passed the English/language arts section of the Georgia High School Graduation Tests. Further, about 94% of the at-risk students passed the mathematics portion of the tests, compared to 89% who passed without treatment to the CAI software. These findings were significantly different than those reported by the State of Georgia, which indicated that about 94% of students across the state passed compared to 96% of those who were treated to the software in this study. Further, about 89% of students across the State of Georgia passed their graduation tests in mathematics, as compared to the 94% who passed the tests after receiving treatment to the software in this study (GA DOE, 2004a).

In regards to the use of NovaNET™ software to remediate student academic skills, it was determined that about 45.16% of participants passed the Georgia High School Graduation Tests by their second attempt; as compared to the 27%, across the State of Georgia, who passed their assessment on the second attempt (GA DOE, 2004b).

Recommendations

It is recommended that further research be completed to determine (a) if the findings of the study can be replicated in populations outside of those included in this study, (b) if other CAI can aid in test remediation.

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PREFERRED LEARNING STYLES AND INSTRUCTIONAL METHODS FOR BUSINESS STUDENTS

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Abstract

Learning style inventories are a popular tool for teachers and students to better understand how individuals prefer to learn. Although much research has been conducted on business students in four-year and graduate institutions, there is a paucity of research available for technical college business students. This may be an indication of the differences in research: the findings in research do not exactly mirror the findings in this study. This article indicates findings from Kolb's Learning Style Inventory on business students in a technical college as well as an indication of their instructional preference; research supports the adaptation of instructional method to learning style.

Despite the complexity of the lessons learned throughout life we know that (a) humans are continual learners and (b) individuals have preferred learning styles (Galvin, August 2001). One indication of quality instruction was the adaptation of instructor teaching technique to match student's learning styles (Kreber, 2001). This study proposed to investigate student learning styles in technical college business programs.

Related Literature

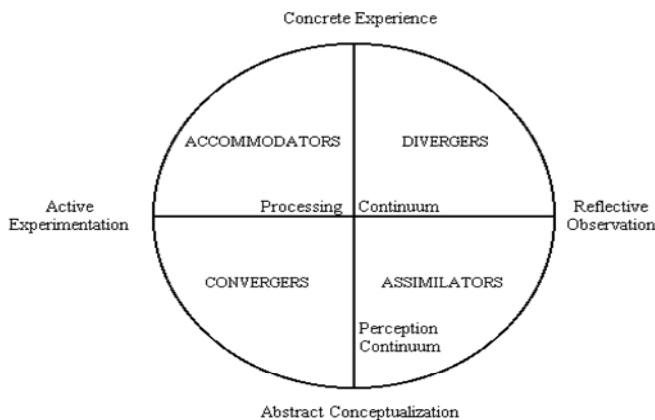
The theoretical framework used in this study was derived from the Experiential Learning Theory, on which Kolb (1984) based his Learning Style Inventory. Literature supported the enormous use of the learning style inventory (Kolb, Boyatzis, & Mainemelis, 1999).

Kolb's (1984) inventory is based on the work of Dewey, Lewin, and Piaget. Dewey emphasized the need for contextual learning, which relied on the experience of the participant. Lewin reported that learners needed to be active in learning process, and Piaget's claimed that intelligence is the result of environment and human interaction (Clark, 2003).

Kolb's Learning Style Inventory

Kolb (1984) reported that there is a 2X2 model of learning that supported four distinct learning styles. A combination of the four parts, creates four learning styles. Those distinct parts are Accommodator, Diverger, Assimilator, and Converger (see figure 1).

Figure 1. *Kolb's Learning Style Diagram*



Divergers

Kolb labels knowledge acquired through concrete experience (CE), on the upper level of the perception continuum, and reflective observation (RO), on the right side of the processing continuum, as divergent. Those participants who predominantly score in this area of the LSI are labeled as Divergers. Divergers perform better in situations that call for generation of ideas, such as brainstorming. In learning situations, Divergers prefer to work in groups, listening with an open mind and receiving personalized feedback (Kolb, Boyatzis, & Mainemelis, 2000).

Assimilators

Knowledge resulting from abstract conceptualization (AC), on the lower level of the perception continuum, and reflective observation (RO) on the right of the processing continuum, is labeled as assimilation. Those participants who predominantly score in this area are labeled as Assimilators.

Accommodators

Knowledge that is obtained from concrete experience (CE) on the upper level of the perceptions continuum, and active experimentation (AE) on the left of the processing continuum is labeled as accommodating. Those participants who predominantly score in this quadrant are labeled as Accommodators. People in this quadrant of the LSI enjoy carrying out plans and involving themselves in new, challenging experiences. In a learning situation, Accommodators prefer to work in groups to get tasks completed, set goals, and test out different approaches to solving and completing a project (Kolb, Boyatzis, & Mainemelis, 2000).

Convergers

Knowledge that is gathered from abstract conceptualization (AC) on the lower level of the

perception continuum, and active experimentation (AE) on the left of the processing continuum is labeled as convergent. Those participants who predominantly score in this quadrant are labeled as Convergers. People who score in this quadrant are best at finding practical uses for theories and ideas and have the ability to solve problems and make decisions based on the solution discovered. In a learning situation, Convergers prefer to experiment with new ideas, simulations, laboratory assignments, and practical applications (Kolb, Boyatzis, & Mainemelis, 2000).

Learning Cycle

Kolb reported that learning was a process where knowledge was created through change in experience. Experiences were transformed and became knowledge. Individuals could either engage their experiences through action or reflection. Most importantly, he also emphasized that the most meaningful learning occurred when learners move through all four learning cycle quadrants (Friedman, Watts, Croston & Durkin, 2002; Kreber, 2001; Sutliff & Baldwin, 2001).

Baldwin and Recker (1984) reported that sophomores accounting majors and accounting faculty were likely to have an Assimilator learning style; while juniors and graduate students were likely to have a Converger learning style, and seniors were likely to have Accommodator learning styles. This suggested a shift in learning style in relation to student engagement tied to their educational level. Baker, Simon, & Bazeli (1986) found that among 110 Accounting majors who were seniors, there were more Convergers than Accommodators, Assimilators, or Divergers.

A more recent study found otherwise. Loo (2002) reported that of 109 Accounting majors there were more Assimilators than other learning styles. Further, Holley & Jenkins (1993) found that about 53% of their accounting students had a learning style characterized as an

Assimilator. Loo (2002) cautioned that although there seems to be consensus in the research it was likely that there were a wide variety of learning styles and students should not be stereotyped based on their major.

Research had illustrated the diversity of learning styles and learning preferences of students, including college students. However, there was a paucity of research in the area of learning style and technical college students. If learning styles were not considered during instructional design and delivery then students may not be in their preferred learning environment.

Kolb (1984) argued that one weakness of current classroom pedagogy was the failure of teachers to recognize the unique and individual differences in student learning styles. His first suggestion was that teachers and learners share learning style theory information so that students have a better understanding of why a particular subject is taught and so that teachers would modify their teaching style to meet the needs of their students.

The assumption by Kolb (1999) was that the more balanced a person is in their dialectic preference, the more they will experience an attraction or tension to either pole; thereby they open a greater range for adaptation and development of learning skills.

Kolb, et. al. (1999) reported in two comprehensive reviews of the Experiential Learning Theory and the Learning Style Inventory that 61.7% of the researched studies supported the Experiential Learning Theory and 22.2% did not; 16.1% had mixed support. Further, the LSI was supported by 89 of 101 reviewed studies.

Approximately half of the analyzed studies reported sufficient data to compute effect sizes. Most reported correlations as low (<.5) and effect sizes in the weak (.2) to medium (.5) range (Kolb, et. al. 1999). The same study clearly stated that “the ELT has been widely ac-

cepted as a useful framework for learning centered educational innovation, including instructional design...” (p.22).

Purpose

The purpose of the study was to determine the preferred learning style and instructional delivery method of a selected group of technical college business students.

Research Questions

Answers to the following questions were sought in the study:

1. What was the most common learning style preference of participants?
1. What was the impact of learning style on preferred instructional delivery method?

Method

The Kolb LSI was administered to 62 students with business majors at a technical college in a large Southeastern state.

The LSI used an ordinal forced choice ranking to scale an individuals preferred mode of learning as either; Concrete Experience (CE), Reflective Observation (RO), Abstract Conceptualization (AC), and Active Experimentation (AE). Two scores were used to indicate a preference for one pole (AC-CE) or the other (AE-RO).

Data collection

Data were collected via a demographic survey of participants’ academic major, age interval, and gender. A forced ranking question, in regards to teaching strategy was also presented. Students were asked to rank ten methods from 1 to 10.

A ranking of one indicated the participants’ favorite method of instruction with ten

being the least favorite. The ten choices included: Assignments/Simulations, Brainstorming, Class Discussion, Group Project, Guest Speaker, Homework, Individual Project, Lecture, Research Paper, and Video or Audio File.

Findings

Sixty-two students participated in the study. Forty-one (66.1%) females, seventeen (24.17%) were males, and four (6.5%) declined to answer the question.

Accounting students comprised 31% of the participants; Business Administrative Technology, 35%; Computer Information Systems, 21%; and Marketing students, 13%.

The age of the participants were scaled into intervals. The majority of participants were from the 17 to 26 age group (n= 27) and the smallest number (n= 3) of participants were characterized as being between 57 and 66 years old.

Question 1: What was the most common learning style preference of participants?

Based on the responses from individual participants, the Assimilator learning style was the most responded (n=22), followed closely by Diverger (n=19), Accommodator (n=12), and Converger (n=9).

However, when all the student scores for the four poles (CE, AE, RO, and AC) were calculated to determine a mean for each category, the resulting learning style preference was Diverger.

The Concrete Experience mean (25.29) was didactically opposed by the Abstract Conceptualization mean (28.39), resulting in a position on the Abstract Conceptualization section of the LSI grid.

The Active Experimentation mean (33.31) was didactically opposed by the Reflective Observation mean (33.02), resulting in a position on the Reflective observation section of the LSI grid. The combination placed the results in the quadrant labeled as Diverging.

Table 1 reveals the distribution of the learning styles among the four business programs surveyed in the study.

It was clear that the Accounting students preferred the Assimilator learning style. When the mean scores of the four poles were applied, the resulting learning style preference was also Assimilator. This coincided with several study findings (Loo, 2002; Holly and Jenkins, 1993; Baldwin and Reckers, 1984).

Less clear were the learning style preferences of Business Administrative Technology and Computer Information Systems. The mean score of all participant pole scores for all stu-

	Accomodator	Assimilator	Converger	Diverger
Business Administration Technology	7	8	0	7
Accounting	4	9	3	3
Computer Information Systems	1	4	4	4
Marketing	0	1	2	5

dents from each program are analyzed the learning style inventory preference for the study participants emerged.

Business Administrative Technology participants preference was that of the Diverger. The Computer Information System participants also were described as that of the Diverger. Both of those programs were designed to be computer-based and hands-on.

While it may have appeared in Table 1 that the learning style inventory preference for Marketing students could be described as that of the Diverger, the mean pole score switched it to that of the Assimilator learning style.

Question #2: What was the impact of learning style on preferred instructional delivery method?

The instructional delivery data were obtained via a forced ordinal ranking of ten instructional delivery methods. It were established that a ranking of 1 indicated most preferred where as a ranking of 10 indicated least pre-

ferred. Overall, the instructional delivery choice of all participants in this survey showed a preference for assignments (M=3.48) and discussion (M=3.73). Whereas, the least preferred methods were research paper (7.89) and guest speaker (6.37). Table 2 reveals the mean for each of their available preferences.

When the instructional preference selections are disaggregated by program, differences can be found between those programs, accounting students preferred assignments (2.84), business administrative technology and marketing students preferred discussion (2.59 and 3.38, respectively) and computer information systems students preferred lecture (2.85). All four of the program participants choose research paper as their least preferred instructional strategy (see table 2).

Conclusion

A number of the studies results mirrored findings in the existing literature. One explana-

Table 2. Mean rank of student instruction delivery preference, overall and by major

	Overall	Accounting	Business Administration Technology	Computer Information Systems	Marketing
Assignment	3.48	2.84	3.41	4.31	3.88
Discussion	3.73	4.84	2.59	4.23	3.38
Lecture	4.21	4.00	4.95	2.85	4.88
Homework	5.06	4.53	4.64	5.77	6.38
Brainstorm	5.71	5.68	5.68	5.85	6.25
Video	6.00	7.16	5.59	5.77	4.75
Group Project	6.18	6.84	6.68	5.08	5.00
Guest Speaker	6.37	6.11	6.68	6.23	6.38
Individual Project	6.26	5.63	6.50	6.77	6.25
Research Paper	7.89	7.37	8.18	8.00	8.13

tion for those differences might be found in the population being studied, for instance much research has focused on four-year and two-year colleges and universities, whereas little research had been conducted that focused on students at technical colleges.

Recommendations

Program faculty at technical colleges should consider student learning style when developing instructional strategies for their courses. When instruction is adapted to meet student needs, students experience positive effects on their academic achievement (Sutliff and Baldwin, 2001; Aragon, Johnson, & Shaik, 2000; Buboltz, Wilkinson, Thomas, & Jenkins, 2000). Recommendations for further research is to increase the number of study participants and further statistically analyze data.

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TECHNOLOGY-BASED GAMES AS AN EFFECTIVE INSTRUCTIONAL STRATEGY IN BUSINESS EDUCATION

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Abstract

This study employed a casual-comparative research design to determine if using technology-based games when teaching business courses in secondary schools represents an effective instructional strategy to prepare students for successful completion of high-stakes tests. Findings revealed that using technology-based games can be an effective instructional strategy to prepare students for successful completion of high-stakes tests, such as the North Carolina Computer Skills Test. Business education teachers are encouraged to use a variety of instructional strategies to prepare their pupils to be successful in high-stakes tests and to remain open-minded regarding the effectiveness of technology-based games used in the classroom to reinforce instruction. In addition, business education teachers are encouraged to become more familiar with technology-based games and to learn how to effectively integrate them into their teaching practices.

Introduction

The business education curriculum has been revised to reflect changes that have been embraced by business education teachers to include areas such as databases, desktop publishing, spreadsheets, telecommunications, multimedia, ethics, and the Internet. One of the most significant changes in the curriculum was the integration of technology into the curriculum (Hosler, 2003). With the invention of the personal computer, the prospects of enhancing educational instruction began to soar and the evolution of the World Wide Web brought about even more changes in teaching and research (Bartholome, 2003).

Technology has also led to computer-assisted instruction, which has evolved over several decades and has assisted teachers in classroom instruction. Computers can be found in many aspects of everyday life such as cash registers, home appliances, toys, games, music, and many more devices. Students use technology daily to eagerly play electronic games instead of reading a book. Many individuals think of this trend as a waste of time; yet, students are actually developing media literacy, which is the ability to read and understand communication in different media forms—printed and electronic (Roe, Stoodt-Hill, & Burns, 2006). Gee (2003) claimed that, as students learn about video

games, they are learning and developing computer literacy, albeit a different type of literacy. While there is great concern about computers being used inappropriately by students (e.g., exposure to violent and sexual content), several advantages exist that greatly outweigh the disadvantages (Standford, Ulicasak, Facer, & Rudd, 2006).

Statement of the Problem

For centuries, teachers have used many resources to motivate and educate children. The primary tool utilized in every classroom was and, in many cases still is, a textbook. However, as noted by Williamson (2007), games have received increased attention over the past decade, especially with advances in computer and Internet technologies. Students are mesmerized with Wii, Xbox, and Playstation games that capture their attention and provide much entertainment today (Annetta, Murray, Laird, Bohr, & Park, 2006). Can games also be used as an effective teaching strategy to prepare students to be successful in high-stakes tests such as the North Carolina Computer Skills Test?

While several educators view games as an excellent teaching strategy, others perceive games as just busy work, entertainment for students, or even a threat to the health of the student. The purpose of this study was to determine if using technology-based games when teaching

business courses in secondary schools represents an effective instructional strategy to prepare students for successful completion of high-stakes tests.

Research Questions

This study focuses on reinforcing teacher instruction by using technology-based games as an instructional strategy. Specifically, this study sought answers to the following research questions:

1. What are the instructional strategies used by business education teachers to prepare students for the North Carolina Computer Skills Test?
2. Are the technology-based games being played in the classroom effective in reinforcing teacher instruction?
3. Do business education teachers who utilize technology-based games to reinforce instruction have higher student performance scores on the North Carolina Computer Skills Test than teachers who do not use such games?

Literature Review

Some of the first technology-based games and simulations for educational use were originally created for military war games (De Fretias, 2006). Game play has been recognized as one of the seven system-wide developments that continue to affect pedagogy (Hlodan, 2008). Technology-based games are fun and provide students an opportunity to review and reinforce material that has already been learned. The use of games represents an effective instructional strategy and offers a much better option than the normal classroom activity of “skill-and-drill.”

The use of games fosters the development of a more creative, enjoyable, and entertaining learning environment. As the curriculum is made more interesting and engaging with the use of games, students’ retention is increased because dull or dry subjects become more appealing and students become more engaged in the learning process. Students work harder as

they compete with classmates to achieve higher scores and get immediate feedback (Gee, 2003).

Technology-based games used in the classroom are designed to exist in relation to a broader collection of classroom activities (Annetta, Murray, Laird, Bohr, & Park, 2006). Unfortunately, schools are focusing on student grades rather than student creativity (Toppo, 2006). Games alone cannot make a student a scientist or engineer and they are not an adequate alternative to real-world experiments (Hlodan, 2008). However, using technology-based games should be viewed as an asset by both teachers and students (Shields & Behrman, 2000) because they allow teachers to reach students at all levels of learning and to design activities that can be structured to challenge the academically gifted students as well as the students working below grade level (Kirriemuir, 2002). In addition, teachers have the flexibility to design games for large groups or a single student. A technology-based game can be structured with timing that benefits teachers, such as five minutes of review before class begins, a wrap-up activity as class ends, or it can even be designed for the entire class period (Prensky, 2008).

Educators play a great role in the development and use of games in the classroom, as they make decisions to integrate them into the curriculum (Hlodan, 2008). However, there is a need for more studies of technology-based game use and simulations in business education (Lean, Mozier, Towler, & Abbey, 2006). In addition, Moursund (2007) pointed out that game play can generate a surge of dopamine, creating an endorphin rush that will excite the pleasure center of the brain. Furthermore, technology-based games help students develop computer literacy skills by changing the verbal expression to a visual picture. Research shows that playing computer games strengthen attention skills, enabling game players to be more alert to many things taking place at the same time (Gros, 2003).

Technology-based games in the class-

room should have a short play session to leave time for set up and discussion (Prensky, 2008). Elements to be considered in the successful integration of technology-based games into teaching practices include: purpose, target-age level, special learning needs, single/multiple players, teacher responsibility, difficulty level, and engagement level (Deubel, 2006). Technology-based games allow active participation that equates to active learning (Batson & Feinberg, 2006). In addition, student motivation is enhanced as students are allowed more control of their own learning in self-directed activities. Students may be motivated to participate in a variety of ways. Ranking “high” on the list of ways to increase motivation and learning is the idea of having a choice for the students. Research shows that giving students an opportunity to select just minor things such as a particular color, level of difficulty, or choice of assignment can enhance motivation (Standford, Ulicasak, Facer, & Rudd, 2006).

Student failure with games is different than in school because there is no “F” for failure with games, but another life instead (Toppo, 2006). What might captivate children are not games in and of themselves, but definite detailed features of game play, which includes flexible control over receptive environments and free-play experience with titles obtained from home in which they can establish proficiency (Batson & Feinberg, 2006). Bartlett, Vowels, Shanteau, Crow, and Miller (2009) reported research that proclaims an increase in cognitive skills from utilizing violent as well as non-violent, technology-based games. This improvement is credited to large amounts of stimuli that game players must respond to when trying to be successful while playing games. Ranking second to violence, Wilson (2007) highlighted teacher unfamiliarity with games, irregular fit in the traditional classroom, and a shortage of assessment measures as the disadvantages of technology-based games.

Teachers and students have parallel views about the advantages and disadvantages of using technology-based games in education (Williamson, 2007). Both groups maintain that playing games enhances computer and other problem-solving skills. However, while teachers are more inclined to believe that students can increase subject knowledge from playing computer games, students believe they can develop social skills (Williamson, 2007). Noticeably, the primary explanation given by teachers for desiring to use games in the classroom was to motivate students; likewise, children thought it would make classes more appealing. Deubel (2006) claimed that a major advantage of technology-based games is that they allow students to benefit from fundamental recall and assist them in tackling complicated problem-solving exercises.

Methodology

This research study employed a casual-comparative research design. A limitation of a casual-comparative study includes the lack of randomization. Subjects were not randomly selected. Selection of subjects for the control group was accomplished through a convenience sampling of teachers who had used technology-based games as an instructional strategy. The researchers used the *matching technique* to control for extraneous variables (Gay & Airasian, 2003). This research study explored the reasons why some teachers experience greater student success than others on high-stakes tests, such as the North Carolina Computer Skills Test, as measured by the State of North Carolina and reported on its Testing Results Web site. As Frankel and Wallen (2007) explained, with causal-comparative research, the difference has already occurred and is being “studied in retrospect” (p. 372). Frankel and Wallen (2007) described causal-comparative research as “ex post facto” or after the fact research, as it investigates the cause for consequences.

Population

Study participants were a convenience sample of eighth-grade business education teachers, located in the Southeastern region of North Carolina, responsible for preparing students to complete the North Carolina Computer Skills Test. The Southeast region includes thirteen counties that include 75 schools and 117 teachers. Questionnaire surveys were emailed to the entire population of 117 teachers and 48 questionnaires were returned for a response rate of 41%.

Instrumentation

Existing data of proficiency percentages on the North Carolina Computer Skills Test for each of the counties and schools in the Southeastern region of North Carolina were collected. The data of proficiency percentages were collected via the State of North Carolina Testing Results Web site. The sole purpose of the Web site is to make state-based testing results accessible to the public. A teacher questionnaire survey was utilized to ascertain teaching strategies employed in student preparation for of the high-stakes test for school years 2007-08, 2006-07, and 2005-06. The researchers constructed the teacher questionnaire survey after a thorough literature review. The researchers obtained approval from the Institutional Review Board (IRB) to conduct this study prior to distributing the teacher questionnaire survey.

Data Collection and Analyses

Teacher questionnaire surveys were distributed via email using teacher contact information obtained from school websites, telephone contact, and the Testing Coordinator within each county. Reminders to complete and return questionnaire survey were also sent via email. As the questionnaire surveys were returned, data were entered into a Microsoft Excel spreadsheet. Data were compared with proficiency percentages obtained online. The data were analyzed using Mi-

crosoft Excel and descriptive statistics were conducted.

Findings

This section presents the findings of the study, following the order in which the research questions were presented.

Research Question 1

What are the instructional strategies used by business education teachers to prepare students for the North Carolina Computer Skills Test? Table 1 provides the frequencies and percentages of instructional strategies used by business education teachers to prepare students for the North Carolina Computer Skills Test, as reported by survey respondents. Visual instruction, drill and practice, and multimedia were instructional strategies identified as being used by all survey respondents. Case studies and writing were the instructional strategies noted for being used the least by survey completers (see table 1).

Research Question 2

Are the technology-based games being played in the classroom effective in reinforcing teacher instruction? Figure 1 presents the effectiveness of using games as a teaching strategy in business education, as perceived by survey respondents. Participants rated the effectiveness of games on a scale of one to five, with one being "least useful" and five as "most useful." Eighteen (38%) of the participants indicated that games were not used as a teaching strategy and did not rate their effectiveness. The remaining thirty (62%) survey respondents reported that they used technology-based games as an instructional strategy and fifteen (50%) of them rated technology-based games as either effective or most effective.

Research Question 3

Do business education teachers who utilize technology-based games to reinforce instruc-

Table 1. *Instructional strategies used by business education teacher respondents to prepare their pupils for the successful completion of the North Carolina Computer Skills Test*

Teaching Strategy	Frequency	Percentage
Visual Instruction	48	100
Drill And Practice	48	100
Multimedia Presentation	48	100
Lecture	45	94
Games	36	75
Peer Coaching/Tutoring	36	75
Simulations	36	75
Review	32	67
Discussion/Debate	27	56
Cooperative Learning	27	56
Team Teaching	21	44
Group Assignment	15	31
Project Based Learning	15	31
Thematic Approach	15	31
Other	9	19
Portfolio	5	1
Reading	4	8
Research	6	13
Role Play	6	13
Case Study	3	6
Writing	3	6

tion have higher student performance scores on the North Carolina Computer Skills Test than teachers who do not use such games? Table 2 indicates the performance scores for the state and each of the thirteen counties in the South-

than the overall State average (see table 2).

Figures 2, 3, and 4 represent frequency graphs of the performance percentages for the respondents' schools on the North Carolina

Table 2. Performance Percentages for School Years 2007-08, 2006-07 and 2005-06 by County

	2007-08	2006-07	2005-06
North Carolina State	82.00	78.90	65.40
Counties in the Southern Region			
Brunswick County	87.70	77.70	62.40
Carteret County	94.70	92.80	82.40
Craven County	87.20	81.60	65.00
Clinton City	85.60	80.90	57.30
Duplin County	75.30	70.10	56.50
Greene County	69.80	74.60	53.90
Jones County	62.20	72.30	5.00
Lenoir County	68.00	64.30	51.50
New Hanover County	86.70	83.80	72.20
Onslow County	85.60	84.90	72.50
Pamlico County	95.00	86.00	72.70
Pender County	88.10	87.00	72.30
Sampson County	77.90	74.90	60.70
Wayne County	77.50	70.40	58.40
Southeastern Region Average	81.52	78.66	60.20
Southeastern Region Median	85.60	79.30	61.55
Standard Deviation	9.96	7.95	18.20

eastern region for school years 2007-08, 2006-07, and 2005-06 on the North Carolina Computer Skills Test. Table 2 also includes the average, median, and standard deviation for the Southeastern region. It shows the median in school years 2007-08 and 2006-07 was higher

Computer Skills Test for school years 2007-08, 2006-07 and 2005-06. The graphs show that schools using technology-based games scored in the upper performance percentage ranges, as opposed to when technology-based games were not used for all three school years. In school year

2007-08, average performance percentage with game use was 85, 18% higher than without games. The median performance percentage was 87, 12% higher than without games. For school year 2006-07, the average performance was 81 when technology-based games were used, compared to 68 without games. In school year 2005-06, the average performance percentage with game use was 16% higher than without games. The average and median performance percentages with game use were higher than those achieved by the State of North Carolina and the Southeastern region. The standard deviation for counties in the Southeastern Region was 9.96, 7.95, and 18.20 for school years 2007-08, 2006-07, and 2005-06, respectively. In the 2007-08 and 2006-07 school years, the standard deviation with game use was lower than the standard deviation for the region. However, the standard deviation was higher with game use than without game use for the region during the three years under scrutiny.

Figure 2: 2007-2008 Academic Performance

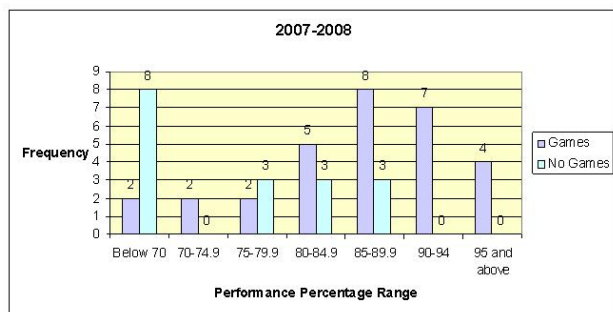


Figure 3: 2005—2007 Academic Performance

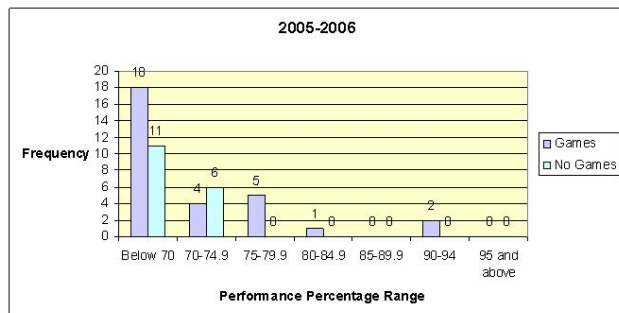
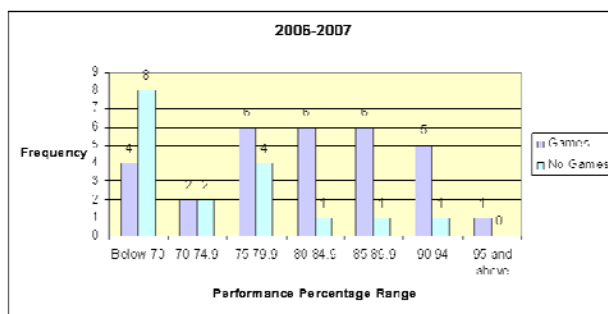


Figure 4: 2004—2005 Academic Performance



Conclusion, Discussion, and Recommendations

This research study found that using technology-based games can be an effective instructional strategy to prepare students for successful completion of high-stakes tests, such as the North Carolina Computer Skills Test. This finding supports the work of Gee (2003), Squire (2002), and Prensky (2008).

The following three instructional strategies were used by all 48 participants in the study: visual instruction, multimedia, and drill and practice. The second most commonly used instructional strategy was the lecture teaching method, noted as being used by 45 (94%) study participants. Yet, the lecture teaching method has been found to be the least effective in learning outcomes, as perceived by students (Gaytan, 2002). In addition, the technology-based instructional delivery mechanism had been found to enhance the teaching and learning process (Gaytan, 2002, 2008).

Time and ease of use might be factors that are affecting the extent to which business educators use technology-based games in their classrooms. Several teachers commented that using games required a great deal of time, which precluded their use. On the other hand, several teachers commented on the ease of using Quia games in the classroom. Quia is a Web site that allows visitors to create learning activities in the form of games, such as Who Wants to Be a Millionaire, Jeopardy, and others. The Quia Web

site also allows visitors to use activities, games, and quizzes that others have created.

Other teacher respondents reported that technology-based games are useful for short activities, warm-up activities to get the class started, and for a review session at the end of class. Teacher comments on the time and difficulty of using games echoed the thoughts of Russell, Bebell, and O'Dwyer (2005) who claimed that teacher time is often limited to properly integrate technology-based games into the curriculum.

Thirty-eight percent of survey respondents did not use technology-based games in their classrooms. The reason for non-use might be explained by some teacher comments related to their perceptions that games are too difficult to integrate into their lessons. However, business education teachers using technology-based games indicated that these games were very effective when used in combination with "drill and practice." Several survey respondents in this study noted that games were particularly useful for teaching vocabulary. Quia games were noted as being most effective in combination with "drill and practice," in lieu of less appealing vocabulary activities.

Technology-based games and the combination of these games with "drill and practice" or "lecture" was listed by almost one-fourth of the business education teachers as the most effective teaching strategy for preparing students for the North Carolina Computer Skills Test. This finding supports the work of several researchers (Annetta, Murray, Laird, Bohr, & Park, 2006) who found that games used in the classroom are intended to work in conjunction with other classroom activities.

Recommendations

Business education teachers are encouraged to use a variety of instructional strategies to prepare their pupils to be successful in high-

stakes tests and to remain open-minded regarding the effectiveness of technology-based games used in the classroom to reinforce instruction. In addition, business education teachers are encouraged to become more familiar with technology-based games and to learn how to effectively integrate them into their teaching practices.

In order to address the concerns related to the difficulty of such games, participation in regional and statewide professional development activities and conferences is highly recommended to take advantage of opportunities to network with colleagues and to receive training in the effective integration of technology-based games into instructional practices (e.g., training in Quia or Quizlet). Colleagues in the same school district or county should collaborate to create effective technology-based games.

Researchers are encouraged to conduct scientific studies to analyze the effect that technology-based games have on student learning. This research study was conducted to determine if using technology-based games when teaching business courses in secondary schools represents an effective instructional strategy to prepare students for successful completion of high-stakes tests. Based upon the findings of this study, it is clear that using technology-based games in the classroom produces better results than not using such games as a part of instruction.

Limitations of the Study

This research study has several limitations. The difficulty in comparing classes of different students and teachers is important to recognize. Specifically, it is difficult to equate the abilities and motivational levels of the students and teachers. An additional consideration is the turnover ratio of both students and teachers, as they experience a high level of mobility. Furthermore, subjects for the study were not randomly selected. In summary, findings of this research study should be treated with caution.

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ONLINE DEGREES: A FINANCIAL ALTERNATIVE FOR ACADEMIC INSTITUTIONS AND SOURCE OF SKEPTICISM FOR POTENTIAL EMPLOYERS

IAN N. TOPPIN

LAVEDA M. PULLENS

Abstract

Many colleges and universities have offered online courses as well as complete degree programs that are available online. This effort had increased the enrollment in colleges and universities; and it also enabled many students to acquire a higher education who may not have otherwise had the opportunity to do so. For those who have the technical pre-requisites, online education is considered an excellent alternative. However, the perceptions of those enrolled in online programs, those who deliver online programs, and potential employers may be critical to the success of 'online degree recipients' (Wilkes, Simon & Brooks, 2006). This article examined the reported disconnect between the growing number of online programs and employer perceptions of online degree recipients.

Introduction

Many academic institutions have developed online degree programs, in an effort to increase student enrollment. These institutions may have chosen to increase online student enrollment rather than traditional, because online programs do not require the same amount of capital investment or new buildings. That meant campuses were able to extend their borders beyond the physical limits in weeks rather than years. For many institutions, distance learning programs were growing and their development had become a matter of survival for many institutions. In economic terms, the return on investment could be significant.

Some of those in and outside of academia had begun to suspect that the motives behind the growing number of online programs were often associated with financial returns rather than quality or other instructional perspectives (Braun, 2008). Specifically, the author noted that "there has been an increase in the number of online universities, degrees, and coursework over the last decade. Institutions of higher learning are beginning to embrace online instruction more than ever before. However, the motives behind enrollment and the benefits of online instruction have not always been clearly under-

stood" (p. 63).

Lee and Nguyen (2007) also noticed a similar trend. Those authors reported, "based on a wide range of statistics, the number of cyberspace courses offered by four-year institutions and universities nationwide has rapidly increased over the past one and a half decades" (p. 35).

Some demographic groups are more likely to earn their degree via online courses and/or degree programs. One significant characteristic is that those who earn online degrees are more likely to be from households, in which parents are unlikely to hold an academic degree (Cooper, 2008). In fact, African-Americans are more likely to hold a doctoral degree from online institutions than other racial groups. The group also is likely to come from homes in which others are unlikely to hold online or traditional higher education credentials.

There had been many positive results from online program development at institutions, there had also been some negative outcomes. One significant outcome had been the perceived diminished reputation of the institution and/or degree program. Another significant negative outcome had been the influence on employer perception, in regards to online degree programs.

One trend that had emerged during the years immediately preceding this study had been the deteriorating economic conditions of the United States. The current era of constrained economic conditions had resulted in an increased number of new or recently developed online programs. Many institutions had elected to grow distance education programs as a means to solidify their finances, during the shift in public finance. One concern was that those programs were developed haphazardly. Burd (2006) reported an extreme case in which a for-profit college was under investigation for boosting enrollment while they offered a sub-par education.

As a result of some poor online programs, many employers had begun to associate the innocent with the guilty and made a broad assumption that the majority of online courses and programs are less rigorous and relevant than traditional degree programs (Ghezzi, 2007). In fact, Carnevale (2007) reported that the words “online education” conjure up images of spam e-mail messages that promise a Ph.D. in exchange for \$5,000 and a bit of “life experience” (p. 18). Racial groups, like African Americans are significantly more likely to be impacted by the perception that online degree programs are less rigorous than traditional programs.

Problem/Questions

The problem of this study was that many online programs and courses had been poorly developed and the reputation of department and colleges offering those programs had declined. The problem was significant because many institutions had developed online programs for reasons other than concerns with rigorous and relevant academic preparation of program participants (Ghezzi, 2007; Carnevale, 2001).

Answers to the following questions were sought:

- (1) What factors influenced the perceptions of academicians and employers,

in regards to online coursework and programs?

- (2) What are the negative perceptions of employers in regards to online coursework and programs?
- (3) What are the negative perceptions of academicians, in regards to online coursework and programs?

Method

A comprehensive review of related literature were reviewed and analyzed.

Findings

The study findings are reported in relationship to their respective research question.

Question #1: What factors influenced the perceptions of academicians and employers, in regards to online coursework and programs?

One factor that had been reported to influence the perceptions of employers and academicians was their personal experience in online courses and programs (Carnevale, 2007). This finding was significant, because it has long been accepted that personal experience influences the model which is accepted and/or preferred when selecting candidates for employment purposes.

Question #2: What are the negative perceptions of employers in regards to online coursework and programs?

Adams, Defleur, and Heald (2007) reported that health care administrators preferred to hire candidates that had earned their credentials through traditional education programs. Carnevale (2007) indicated that employers preferred to hire job candidates who earned traditional degrees/preparation over those from online institutions and/or online degree programs.

Question #3: What are the negative perceptions of academicians, in regards to online coursework and programs?

A strong indication that many academicians are not satisfied with online program completers, is their reported reluctance to hire online degree completers, as tenured line faculty.

Many academicians are aware that online programs/degrees are negatively perceived by employers. As a result, Garis (2007) indicated that institutions should focus on quality online coursework and programs. The author further provided instructional strategies to engage students, which was indication that many existing courses and programs had not engaged students.

Garis (2007) reported that institutions should consider utilizing electronic portfolios to validate their course and/or programs impact on participants. Baskin (2006) reported that institutions should focus on clarifying their education mission, improvement in student skills, and improvement in job placement of online course/program completers.

Implication

The continued growth of online degrees and programs, may pose a significant challenge to academics and program participants, as a result of some negative perceptions. The implication of this study is to call for additional research into the perceptions of key stakeholders, in regards to online degree programs.

Specifically, the implication of this study is to provide academic stakeholders the opportunity to examine the benefit and consequences of online degree programs. Further, program participants should also be aware that their online credentials may be negatively viewed by potential employers. Further, employers should consider the quality, relevance, and rigor of online programs in making employment decisions.

Overall, the significant implication of this study is to call for additional research into the administration, development, and outcome of online degree programs.

Conclusions

While additional research into the outcome of online degree programs is needed, this study indicated that employers preferred to hire employees who had earned a degree from a traditional university. It appeared, in the literature, that the method in which the person responsible for hiring received their training (traditional v. non-traditional) significantly impacted their hiring decision, in regards to the candidates method of degree preparation.

Because, the literature further indicated that employers continued to prefer job candidates that had received their credentials from non-online institutions and/or programs (Carnevale, 2007; Adams, Defleur, & Heald, 2007). This finding was quite significant for those likely to participate in online degree programs.

Academicians appear to be concerned over the rigor and relevance of online degree programs. In fact, academic faculty are more likely to support hiring traditionally prepared academic faculty, for tenure track employment positions. The literature reported that some programs lack quality, institutions should focus on documenting the quality and skill preparation of online degree programs/courses (Garis, 2007).

Institutions who choose to offer online credentials, would be well advised to consider adopting artifacts, like electronic portfolios, to document student learning. Those artifacts should be developed by reflecting on the mission of the educational institution, student skill, and placement of program participants.

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WEB 2.0 TECHNOLOGIES: 21ST CENTURY LEARNING AND ENGAGEMENT

ERIC KISLING, PH.D.

Abstract

Students are using Web 2.0 technologies on a daily basis in their personal lives. With the interactive medium that Web 2.0 tools offer, it has become time for secondary and post-secondary teachers to consider integrating these tools into their course curriculums. This paper discusses the Web 2.0 technologies that can be used to enhance classroom curriculums, engage students, and form learning communities. Through the use of Web 2.0 technologies, business educators should be able to offer unique assessments while engaging their students in the classroom or online. Finally, the paper provides examples of integrating Web 2.0 technologies assessments into the business education classroom which can be applied at the secondary and post-secondary education levels.

Introduction

Students often increase their classroom engagement when provided with opportunities to use technological resources. These technologies encourage “open, personalized, participative and social” (Ravenscroft, 2009, p. 1) web-based applications. According to Tim O’Reilly (2007), Web 2.0 applications are based upon the notion that Web 2.0 is a network platform spanning all connected devices and “delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources” creating a rich user experience (p. 17). Web 2.0 applications allow students to work with others from all over the world. Students come into the classroom at the secondary and post-secondary levels expecting to use information technology and Internet technologies in their courses (Chu, Hwang, Tsai, & Chen, 2009; Lukow & Ross, 2003; Rickman & Grudzinski, 2000). By using Web 2.0 technologies, business teachers can engage their students and enhance the learning of the course content. Through this engagement, the learners’ expectation of using technology across their course of studies in secondary and post-secondary institutions is met.

The use of technology in the classroom curriculum is not a new phenomenon. Radio was a medium that was introduced to classrooms all over the world in the 1920s and 1930s (Cuban,

1986). In the 1950s television was introduced. Each medium brought an attitude of solving learning barriers among students. Each medium was seen as a solution for bringing all students to the same education level, yet neither medium produced the results educators were looking for (Lindgren, n.d.). As education institutions moved to computers and now to online education via the Internet, researchers are questioning the value of how things are currently done and how they may need to be done in the future (Wiley, D., 2008, November). Students are living in a digital world while many educators are still living in an analog world. This needs to change and Web 2.0 technologies can help bring educators into the digital era of education. These digital students have developed their social communities to share information and to be engaged with one another. These interactions can be with friends in the same computer laboratory or acquaintances across the world. The question for educators is to determine how to take these social communities and turn them into learning communities.

Learning Communities

Web 2.0 technologies foster the aspect of creating learning communities across the globe. A learning community is a group of individuals who discuss and interact with one another to foster a deep understanding of a course’s subject matter (Santovec, 2004). Hord (1997)

explains that educators describe these communities as “extending classroom practice into the community, utilizing community resources, both material and human” (p. 10). As higher education institutions use learning communities for cohort-based education, secondary education institutions could also develop these “class-cohorts” that use Web 2.0 technologies to learn. Students have already developed social learning communities using Web 2.0 tools such as Facebook, MySpace, Twitter, and others. By moving these social communities toward learning communities, educators can begin to use the tools that their students have been using for social purposes and use them for learning purposes. This has the advantage of allowing students to use tools that education institutions’ policies forbid. Allowing these Web 2.0 technologies into the classroom will also naturally create learning communities among the students.

There are numerous benefits to forming and using learning communities in the classroom. According to Kellogg (1999), the benefits of a learning community projects past students and faculty to the institution. Research by Kellogg (1999), has shown that students who participate in learning communities display the following characteristics:

- An increase in academic achievement;
- An increase in retention;
- An increase in motivation;
- An increase in intellectual development;
- An increase in learning; and
- An increase in involvement and community.

With these positives it is interesting that many institutions have yet to adopt a model of supporting Web 2.0 learning communities. Learning communities increase positive views of the institution by its participants. Faculties who have used learning communities in their courses have indicated that they are re-energized and more empowered (Kellogg, 1999). These benefits enable instructors to develop rich, authentic assess-

ments for students to work on using their Web 2.0 technologies.

The basic characteristics of a learning community vary, but share several basic characteristics that are listed below:

- Creating smaller groups,
- Encouraging integration of the curriculum,
- Establishing academic and social support networks,
- Providing a setting for the socialization of the expectations of college,
- Bringing individuals together in more meaningful ways,
- Focusing on learning outcomes, and
- Providing a setting for community-based delivery of academic support programs (Shapiro & Levine, 1999).

As these characteristics express, students and faculty are engaged and benefit from the use of learning communities in the curriculum. Business education instructors can create assessments that use learning communities and assessments that look at the student as an individual. However, using the learning community model in the classroom, one can see that both the instructor and the students benefit. But what Web 2.0 technologies allow these communities to be formed and to prosper?

Web 2.0 Technologies

There are a number of key principles for Web 2.0 Technologies (Solomon & Schrum, 2007). They are:

- Read versus Read and Write;
- User generated content;
- Experts versus public opinion; and
- The content comes to the user via the Web 2.0 technology.

These key principles indicate that the Web 2.0 is an interactive and social Internet. It is no longer the power of the individual, but the power of the crowd. These crowds use Web 2.0 tools to generate content in wikis and blogs and download podcasts to catch up on their favorite show. Students use these technologies to build communities and to have a social presence in the world.

With students using Web 2.0 technologies for social networking, instructors need to become familiar with the technologies that will benefit the classroom. These technologies can range from audio, video, and virtual to written information. There are five major technologies that can be integrated into the business education classroom. They are:

- Podcasting;
- Wikis and Blogs;
- Folksonomy;
- Video sharing; and
- Social networks.

According to John Thompson (2008), using Web 2.0 technologies in education increases user creativity and community while concurrently empowering user ownership of content. It also involves user-generated content leading to "collective intelligence" that benefits many. It is also collaborative in nature and features user-generated content. These are some of the features of the learning communities that can be formed through the use of these technologies. Focusing on these technologies and the formation of learning communities will allow business educators and educational leaders to determine whether to adopt or not adopt these Web 2.0 tools and to integrate learning communities.

Podcasting

Podcasting is a phenomenon of professional and homemade media broadcasts available over the Internet where students, employees, and activists become producers. A podcast is a form of one-to-many media distribution since anyone can download a podcast if they know where to find it (Robinson & Ritzko,

2009). A Podcast could actually be called a broadcast. Prior to the iPod, a podcast was mostly an mp3 formatted audio show listened to on a computer using an audio player.

When we compare the podcast to radio, we find that the podcast has incredible flexibility. Radio has a limited number of stations running content that only occasionally meets a listener's needs. The listener has to be listening when a particular show is broadcast and the sequence of the content is determined by the station. One can either listen or change the station. There is no pausing radio to do something else. The financial problem is that only organizations with financial means and strong technical staffs can publish via radio. It is expensive and there is always a risk taken that the intended audience may miss an important presentation. However, podcasting is different.

The iPod® and iTunes® changed how information could be distributed and shared. There are hundreds of thousands of podcasts to choose from covering a large range of topics. A person can listen to any episode when they want, where they want. They can pause, play, rewind, skip; they are in total control of the podcast. There is a low technical and cost barrier to publish the podcast. While podcasts are the best known type of personal Internet broadcast, vodcasting is also a Web 2.0 tool.

A podcast can optionally have an embedded image or even synchronized images visible on iPods with photo capabilities. All current models of iPods other than the shuffle are capable of showing a vodcast. Authors can create chapter markers and embed them into the vodcast making it possible to jump to specific sections of the content. Finally, podcasting can also be used to distribute pdfs, graphics and digital video to iTunes®' clients. This provides a convenient, subscription based model for distributing educational materials. This means podcasting can have many useful roles in the classroom (Robinson & Ritzko, 2009).

Podcasting can be used in classrooms, in distance education, for Just-In-Time training, and distributing supplemental information. Business educators should use podcasting for offering additional content, offering a refresher, and for informational purposes. The advantages of podcasting are the podcast can be downloaded and accessed very easily, podcasting connects people in different places to the same information, and podcasting allows students and the teacher to express ideas very creatively. Unfortunately the main disadvantage of podcasting is the problem of accessibility. Not everyone has an iPod or a computer. Individuals also do not take the time to search for podcasts because they do not wish to have to go through the podcasts to determine if it is informative.

Podcasting can be used in education for professional development, supplemental textbook materials and resources, used for school-to-home communications, for lectures or daily announcements, listening to audio books, speeches, and music programs, test preparation, and synchronized slideshows. These uses can be included in course curricula to allow students to discover the power of being a broadcaster.

Wikis and Blogs

A wiki is a collection of web pages designed to enable anyone who accesses it to contribute or modify content, using a simplified markup language. Wikis are often used to create collaborative websites and to power community websites through the use of “dynamically created Web pages with content contributed directly by users in a Web browser” (Yates, Wagner, & Majchrzak, 2010, p. 543). The most popular wiki on the World Wide Web is Wikipedia® found at <http://www.wikipedia.org>. A wiki invites all users to edit any page or to create new pages within the wiki Web site, using a Web browser. A wiki is not a carefully crafted site for casual visitors. Instead, it seeks to involve the visitor in an ongoing process of creation and collaboration that constantly changes the Web site landscape. Wikis are dependent on its community. If the community of users that interact on the wiki

cease to use the wiki, the wiki will no longer be useful. This dependency is critical to the usefulness of the wiki. Once a group abandons a wiki, it is no longer reliable. The power behind Wikipedia® is the fact that the community of users ensure that entries are accurate and will change entries if there are errors.

A benefit of using a wiki in the business education classroom is wikis can enable students to build documentation and knowledge base systems, with relatively little investment from the instructor. The instructor can assign a chapter reading and use a wiki for the students to summarize the reading. When students see their peers evaluating what is written and changing, adding, and deleting what is placed on the wiki, the power of the wiki comes to life for the student. They realize that a wiki is a living document that is dependent on the community in the classroom for its accuracy.

A blog is an online journal or website on which articles are posted and displayed in chronological order and can contain video and graphic material (Chen, 2009). It “is a short term of ‘web log’—an online chronological collection of personal commentary and links” (Hong, 2008, p. 34). Blog entries are made in journal style and displayed in a reverse chronological order, from the most recent entry to the least recent. Individuals who write blogs are known as bloggers. The collection of blogs around the world is often referred to as the Blogosphere. The Blogosphere is often used as a proxy for public opinion by news organizations and academics.

A blog is a lot like an online journal or a student’s class diary. The blogger can talk about anything and everything. Many blogs are full of interesting links and stories or little snippets of information that are interesting to the blogger. A blog is normally a single page of entries and there may be archives of older entries. The entries in a blog are usually stream-of-consciousness and there may be no particular order to them. The tools that most bloggers use make it incredibly easy to add entries to a blog any time they feel like it. One of the most popu-

lar blogging programs on the Internet is Blogger. The program can be found by going to Google's website.

Folksonomy

Folksonomy (also known as collaborative tagging, social classification, social indexing, and social tagging) is the practice and method of collaboratively creating and managing tags to explain and categorize content. Students are able to use Web 2.0 tools such as Delicious® to practice folksonomy. Delicious® is a social bookmarking tool that is used online. Users create a free account and are able to create bookmarks that are accessible from any web browser in the world. The social aspect of the site is that it tracks the bookmarks being saved and will list the top bookmarks each day and on a variety of topics. This allows other users to see sites they may have not realized existed before. It is the learning community enabling learning to occur. Other folksonomy sites are Digg, Reddit, and Slashdot. All of these sites are generated via its users posting links to content that may be of interest to the rest of the social learning community. One example is the use of Yammer® for classes in the Business and Information Technologies Education program at East Carolina University. Yammer® can have private groups and allows one to use it much like twitter. Students are able to post questions for the entire class, not just the instructor. Currently, it is being used for BITE5503 – Integration of technology into the business education classroom.

Video Sharing

Video sharing is the process of recording a video and uploading it to a video sharing service such as YouTube, Google Video, or Break.com. Once an individual has created their account and uploaded their video to the video sharing service's server, the video can be set as either public or private. If the video is set to public then everyone on the Internet will have the ability to view the video. There are many applications that video sharing can serve in both a social and educational way. Many universities in the United States have their own YouTube chan-

nels that instructors are using to assign students to do projects or to post vodcasts.

Social Network

A social network service uses software to build online social networks for communities of people who share interests and activities or who are interested in exploring the interests and activities of others. Social networks allow individuals to come together with a common interest or cause and to be able to learn from one another. These individuals are called "nodes" which are connected and have a common tie to one another such as friendship, financial situation, dislikes, or relationships of beliefs, knowledge or prestige.

Using social networks in the business education classroom will give students the ability to network before, during and after the class. Business educators can use social networking to promote year-round communication, stimulate and increase student interaction, provide statistics to attract future students, maximize students' networking time, and define groups for class projects. The power of social networks is its ability to give everyone a voice to share ideas and spur innovation. That ability will help engage students in the content of the business educator's classroom and enable the creation of learning communities within these networks. Many educational organizations have a presence on Facebook, twitter, and other social networking sites.

Examples for Business Education Curricula

The following are a list of assessment ideas that the business education instructor can include in their course curriculum. These are general ideas that involve the five major Web 2.0 technologies.

Podcasting.

- Sound-seeing tours; i.e. Museums use these to allow visitors to tour the museum at their own pace;

- Broadcast student audio plays that are created in drama classes or radio and television courses;
- Interviews with content experts;
- Ongoing student produced “radio” talk shows about content learned; and
- Students teaching content areas for the rest of the class.

Wikis and blogs.

- Chapter summaries provided by the teacher or produced by the student;
- Group book reports;
- Content generation by students and verified by the teacher;
- Weekly summary of the course materials and activities;
- Answering the question of the week; and
- Posting homework to a personal, publically accessible blog.

Folksonomy.

- Have teams keep a delicious account to keep track of the research sources they are finding for a group paper.

Video sharing.

- Create a video commercial and upload to YouTube. Let the class grade each group’s commercial;
- Self-introductions to class instructor and fellow students; and
- Assign subject areas that students will have to create a video to teach the subject to the rest of the class.

Social networks.

- Use Second Life for discussion, team collaboration, one-on-one support in the distance education

environment;

- Use instant messaging for quizzes or Q&A sessions;
- Use Twitter to track teams and to give immediate updates to projects; and
- Use Facebook for the class’s web site and assign students to post information to the site each class period.

All of these assessment ideas are just a small representation of what can be done in the business education classroom using Web 2.0 technologies and allowing the classroom to be transformed into a learning community. Using any of the five tools mentioned in this article will not only engage students, but should also encourage the business educator to broaden what is done in the business education classroom.

Summary

There is currently a limited amount of research on the engagement of these tools in the classroom, but as time passes more can be done to determine Web 2.0 Technologies’ affects on the student and their learning, the instructor and their teaching, and the classroom learning environment. Further studies need to be conducted prior to being able to positively claim that Web 2.0 increases student engagement in the business education classroom. Although there is only a small amount of evidence concerning the use of Web 2.0 technologies in the classroom, Web 2.0 technologies are being embraced by educators across the country and students are using these technologies in their daily lives (Rickman & Grudzinski, 2000; Solomon & Schrum, 2007; Thompson, 2008).

Web 2.0 technologies and learning communities are powerful resources for engaging students in the business education classroom. Educators need to consider the power of these Web 2.0 technologies and consider embracing these tools for engaging students in the classroom. These technologies can allow students to begin to strive to learn more about the course

subject areas. Learning communities can be formed and peers can evaluate one another. The business education instructor can move from being a lecturer to being a facilitator. The students in the classroom are already embracing these technologies and using them on a daily basis. The business education instructor will do well to study these technologies and determine their effectiveness in their classroom. Many of the tools discussed in this article were found at the Internet's most popular wiki website, Wikipedia.org. Students are expecting technology to be used to engage them, not create busy work. By using Web 2.0 tools that expectation can be fulfilled.

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