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LEVERAGE LEARNING IN THE UNIVERSITY CLASSROOM

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ABSTRACT

Each semester faculty members at a regional university encountered students in their courses who were unprepared for learning. As the demand for rigor continues to increase in all fields of study continues to increase, professors expressed concern regarding preparedness of their students to enter the work-force. In an effort to leverage the learning taking place under their direct supervision, faculty members re-designed their courses and placed responsibility for basic content acquisition on the students. When students arrived in class each week, students were actively engaged in the learning process through student-centered learning events. After class, students were required to demonstrate reflective practitioner skills in a real-world format. Application of digital tools allowed students to learn the basic content and demonstrate learning in a manner conducive to their learner preferences. Students were engaged in the learning process before, during and after class. The course redesign instructional model provides a framework for CELDA participants as they address main issues with the evolving learning processes and technical applications in the digital age.

KEYWORDS

Student-Centered Learning, Technology, Engagement

1. INTRODUCTION

With growing frequency, faculty members in a regional state university expressed frustration when university students did not read assigned materials and would not disengage from digital connectivity in their classroom. In a like manner, the university students noted, in the course evaluations, technology was used in varying degrees throughout the learning process. The inconsistency with which faculty members utilized the standard course management system (Blackboard) also frustrated students, specifically, the organizational structure of the courses (Institutional Research, 2012). In order to address the disillusionment of students and the frustration of faculty members, the university invited faculty members to volunteer and re-design their courses based on research and best practice in teaching today's young adults. Research on contemporary challenges facing the country was examined and the effective techniques of adult education explored. The effective application of technology in the teaching and learning process became the linchpin for course re-design.

2. REVIEW OF LITERATURE

2.1 Contemporary Challenges

Results of the 2010 Programme for International Student Assessment (PISA) released in December of 2010 rekindled the United States' frustration with the state of public school instruction. While Shanghai, Korea, Hong Kong, Singapore, Finland, Canada, Japan and New Zealand ranked in the top seven, the United States ranked 25th on an internationally standardized assessment of 15-year-old math students (Guria, 2010). PISA rankings take into account differences among culture and economic systems. As a result, PISA provides benchmarks to measure existing differences while providing countries flexibility in setting realistic goals that meet national conditions.

As global competition intensifies and productivity patterns change, the United States will need creative reform of attitude and strategies to maintain an economic role in global markets. Furthermore, because countries with limited resources consistently outperformed United States' students, increase in money alone is clearly not the solution.

In addition to increasing educational competition, the United States faces growing international competition for the job market. Pink (2006) suggested material abundance has shifted social emphasis from survival to a greater emphasis on "self" development in terms of beauty, spirituality and emotions. In contrast, Asian countries have focused more directly on economic development. Graduating huge numbers of degreed workers willing to work for less income, Asia has rapidly absorbed outsourced jobs. Simultaneously, United States white-collar jobs are lost through rapid improvements in automation and online technology.

Economic sustainability is reliant upon a competitive work force. Education remains the best tool for creating future global workers; however, changes in public education are necessary to reflect marketable, international skills. The challenge of remaking a relevant educational system is complicated when one considers the evolving need to effectively address a most "different" type of learner.

2.2 Needs of Learners

While some debate the existence of generational characteristics (Bennett & Maton, 2010; Helsper & Eynon, 2009; Trzeniewski & Donnellan, 2010), many contend that contemporary students think, behave, and learn differently due to ubiquitous exposure to technology (Prensky, 2001; Tapscott, 2009; Taylor 2005). Contemporary learners equipped with hyper connected and multi-tasking digital brains, are unprepared to endure the slow pace of instructional practices developed more than a century ago (Sprenger, 2009). Consumer and entertainment oriented, intellectually disengaged in non-digital environments (Taylor, 2005).

Physical evidence corroborates brain differences resulting from exposure to digital media in terms of how digital learners process, interact, and apply information (Juke, 2006). Stimulation and adaptability enables the brain to constantly reorganize or rewire itself (Jensen, 2005; Willis, 2008). Brains of digital learners are physically different from those of learners who have not experienced ongoing exposure to technology. Digital learners fundamentally think and process information differently than their predecessors by using multi-tasking and parallel processing; they prefer graphics to text, random access (hyperlinks), networking, instant gratification, frequent rewards, and games rather than "serious" work (Prensky, 2001). Jensen (2005) recommends instruction based on problem solving, critical thinking, relevant projects, and complex activities that stimulate the brain and challenge learners. Interactive feedback must be specific, timely, and learner-controlled while addressing multiple modalities.

Combining digital learner processing skills and learning preferences with brain research further justifies breaking from the current teaching/learning paradigm in which professors control content, delivery, and products in favor of authentic learner engagement. Carmean and Haefner (2002) suggest deeper learning principles are required to help engage digital learners in meaningful content processing.

2.3 Instructional Engagement

To evolve from passive content-consumers to active information-processors requires instructional engagement. Engaged learners work collaboratively, transforming understanding through creative problem solving (Jones, Valdez, Nowakowski, & Rasmussen, 1994). Taylor (2010) noted authentic engagement occurs when educators furnish students with enough skills and tools to become self-motivated. Schlechty (2001) stresses students learn best in applied learning tasks, emphasizing engagement is an active and interactive process, and not synonymous with time on task. Engaged students learn more, retain more, and enjoy the learning activities more than unengaged students (Dowson & McInerney, 2001; Hancock & Betts, 2002; Lumsden, 1994; Voke, 2002). Instructional goals that create opportunities for authentic engagement, where students meet expectations and intended instructional outcomes responsive to learner interests and values, produce the most effective learning (Schlechty, 2002).

2.4 Instructional Technology

Through interaction and exploration in creative and innovative ways, technology empowers students to communicate and socialize beyond the classroom. No longer limited to physical space, an expanded classroom can accommodate community-driven, interdisciplinary, and virtual collaboration. This provides an unprecedented opportunity for schools to reexamine traditional approaches and current practices, and redesign parameters of effective instruction (The Horizon Report, 2010). Supporting educator effectiveness by expanding innovative learning models that utilize online and blended learning, high-access, technology-enriched learning environments, and personalized learning models will increase student learning (Bennett & Maton, 2010).

More research is needed to understand how to design technology-infused, learner-centered instruction. Technology in an educational setting should focus on instructional goals rather than technology innovation. Furthermore, deeper understanding is needed regarding the instruction models designed to support technology-rich environments. Puentedura (2008) identified four levels of technology use in class instruction: substitution, augmentation, modification, and redefinition (SMAR). Created to help teachers reflect and refine their use of technology in instruction, the first two levels of the SMAR model focus on instructional enhancement, technology as a tool substitute, but provides no functional change (testing on computer instead of paper). At the next level, technology still substitutes for a conventional tool, but with functional improvement (watching a video versus modeling the process). However, at the transformation level technology significantly improves instruction. Technology used to redesign or create original tasks result in richer, more engaged and integrated learning at higher levels of thinking.

2.5 Instructional Innovation

Instructors with content competence and an arsenal of effective instructional strategies produce higher achievement outcomes among students (Coleman, et al., 1966; Rowan, Correnti, & Miller, 2002; Whitehurst, 2002). Ensuring transformation in educational processes requires creation of new instructional models by effective instructors; however, many university professors are reluctant to embrace this shift due to technology availability, cultural lag (change in universities happens more slowly), and instructional training (Chen, 2007; Johnson, 1997; Maddux, 1997). Nevertheless, Cavanaugh, Dawson, & Rithaup (2011) found infusing integrated instructional development, support, and technology produces significant changes in teaching practices: direct instruction decreases, collaboration and project-based learning increases, and student motivation and engagement improve. Specific to technology integration, Somekh (2000) found educational institutions that recognize the importance of information and communication technology promote integrated instruction to transform the learning process more effectively when reform is implemented in a bottom-up fashion.

Teaching digital learners demands different instructional strategies. Educators today must engage digital learners and create instructional opportunities by utilizing technology to empower learners. Universities must move from automating processes (testing, email) to informing processes that empower students to solve problems, access information and create relationships outside the classroom using the tools of technology (November, 2010).

3. COURSE RE-DESIGN PROCESS

3.1 Rationale

Faculty members at a regional university located in the southwestern portion of the United States discussed students' apparent inability to adequately prepare for class participation. Students did not complete reading assignments or prepare themselves for intellectual participation in class discussions. Students were not satisfied with their learning experience at the university. Through end-of-semester course evaluations, students noted the frustration they experienced because faculty members did not use current technology in the learning or evaluation process.

Courses presented inconsistencies in the use of the university course management system. Confusion and frustration were the results of this practice (Institutional Research, 2012).

To effectively prepare a new generation of people for the country's work-force, Arthur Levine (2010) asserts education programs must transform the use of traditional educational practices such as lecture, note-taking and dated textbooks. Today's students, both in higher education and public schools, are digital natives (Pink, 2006). These students routinely use technology for acquisition of new information, communication and collaborative projects. As a result, students must be engaged in authentic learning experiences using skills from the real-world. Best practice in education suggests students must be actively engaged in the learning process for content to become meaningful (Schlechty, 2001). Engaged students retain information longer and apply the content in new situations (Jensen, 2005).

3.2 Faculty Cohorts

Based on the concerns of professors/students and best practice research, cohorts of faculty members decided to transform a set of initial courses across disciplines at the regional university. The faculty members developed an alternative content delivery method, held students accountable for the acquisition of the basic information before class, and imbed technology in the learning process. As a result, the engaged students critically applied new knowledge in an interactive setting: the classroom. Following each class session, students reflected on the basic content, the peer-to-peer interactions during class and applied the learning to future work-related settings.

This collaborative effort in course redesign simultaneously embraced students' digital connectivity and enhanced content acquisition. The components of course redesign included:

1. Acquisition of basic course content information prior to class attendance;
2. Evidence of basic content knowledge upon arrival to class;
3. Actively participate in authentic learning experiences;
4. After class, students reflected on lessons learned.

3.3 Re-design Components

Faculty members developed a wide variety of learning objects to be experienced prior to each class meeting. The objects were accessed by students and a form of accountability associated with each. For example, the professor developed a visual and auditory object the students would access before class (example: Captivate product). The student would complete a viewing guide which accompanied the learning object. This process ensured the acquisition of basic course content information prior to class attendance.

Upon arrival to class, the students produced evidence of their basic content knowledge. The evidence took the form of a completed viewing guide, question they wanted answered in class that day or a summary statement of the most important information gleaned from the learning object at that time. In some classrooms, if the student arrived unprepared for class, the instructor directed the student to remain in the hallway and complete the assignment. Only when the evidence of basic knowledge was produced to the instructor was the student allowed to enter the classroom. These high expectations of class preparation caused the classroom to take on the professional environment of the real-world workplace. Arrive prepared for work, or go home and return ready to contribute to the learning community.

During class, students actively participated in authentic learning experiences which deepened course content understanding.The experiences were completed in teams and/or individually. In teams, they solved real-world problems such as designing an advertising campaign for a local business. They presented the results of their work as a team and local business owners provided feedback for improvement and acknowledged the strong points of the presentations (authentic audience). Students individually evaluated various procedures for solving a problem in their career fields while applying the basic content gained before class. At this point, the instructor provided guidance, facilitating the learning at the most critical point: application to the current dilemmas which students will encounter as new graduates. Students realized the importance of the content as the information was juxtaposed with contemporary issues in their field of study.

After class, students reflect on lessons learned before class through the learning objects and during the interactive learning experiences in the class. The learning follow-up took the form of extended learning assignments which directed students to expand current understanding of information.

Interviews of people in the field of study were used to enhance student application of course content. Reflective journals were also applied as a way of deepening understanding of course content. Students were given higher order thinking skills prompts to guide their reflections. Students were directed to apply the course content to the real-world field of study and then analyze the potential impact the application would have on the future of education. As a final reflection assignment, students created a classroom intervention plan to address unique instructional challenges they observed in the public school classroom during the semester.

4. RESULTS

Access to student course evaluations was not available at the time of this paper. However, a concise comparison of course success was submitted by a participating faculty member. By taking the course success rate before course re-design and comparing the success rate of the re-designed course, preliminary conclusions were drawn. The classes were taught by the same professor, same location and instructional equipment and class size was similar. The difference was the application of the re-designed course.

The course submitted for evaluation was EDU320: Professional Development One: Understanding Learners. The course included an examination of students and teachers in learner-centered schools. Topics addressed brain-based learning, cooperative learning, learning styles and strengths of diverse learners and formal and informal assessment and learner-centered instruction. A technology lab and documentation of field experiences were required. The pre-requisites or co-requisite included PSY 220 or 303 or HS 300 and minimum of 60 hours toward certification or degree requirements. The grading scale used for this course was 90-100% earnings of course credit equaled an A, 89-80% a B, 79-70% earned a C, 69-60% earned a D and lower than 60 % was failing (F). If a student withdrew from the course, the student received a W on their transcript.

The total number of students in both semesters was 154, and all students were of junior and senior standing. Grade comparison of the spring 2011 semester control group (N=81) and the spring 2012 semester experimental group (N=73), indicate the percentage of students earning the letter grade A increased from 32% spring 2011 to 53% spring 2012. As a result, students earning the letter grade B in spring 2012 decreased to 36% compared to 42% in spring 2011. Additionally, the students earning C decreased in spring 2012 to 1% as compared to spring 2011 when 12% of the students earned a C. The increased number of students earning A in spring 2012 naturally decreased the number of students earning B and C in spring 2012.

The percentage of students earning a D remained the same both semesters. Seven percent of the students earned an F in spring 2011 compared to 3% in spring 2012. The percentage of students withdrawing from the course was essentially the same both semesters (5% 2011 and 6% 2012).

The instructor of record for the submitted course identified three areas of interest for consideration. The first challenge was the reflective process of organizing the content of the course so there was a sequence to the learning experiences both outside of the classroom and coordination with the learning experiences of the classroom. Next was the time required to create the visual and auditory learning objects. Two new software programs were applied (Captivate and Soft Chalk). The third and final challenge involved the interactive learning experiences for the classroom. The instructor created the learning experiences that would appeal to adult learners while holding them accountable for the application of knowledge gained outside the classroom. The experiences included solving real-world problems presented in scenario fashion, ranking effective teaching strategies for fictional public school students and creating artifacts in teams where each team member was responsible for a unique portion of the final product.

Initially, the findings suggest the re-designed course assisted students earning the letter grades of B and C to increase their final grade by a full letter. Course re-design may be the tool that assists student learning and in turn produces a more authentically attuned society. In a like manner, course re-design may be the tool that assists faculty members to critically evaluate the essence of the course and adjust assignments to reflect real-world solutions in the field of study.

5. CONCLUSION

The course redesign model provided a formal vision of how traditional instructional practices could be altered to reduce frustration on the part of faculty members and students. The model articulates a process by which faculty members work collaboratively to enhance classroom learning and improve their pedagogy for the newest type of learners.

The course re-design model suggests a variety of effective instructional practices to replace frustrating traditional strategies. Student frustration decreases because the redesign provides a common look-and-feel in course presentation and expectations. Evidently, the consistency of the redesigned courses significantly lowered the drop, failure and withdrawal rates. The course redesign instructional model provides a framework for instructors as they discern the future direction for higher education programs.

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