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The Development of a Hybrid Safety Course

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The Development of a Hybrid Safety Course

In partial fulfillment of the requirements for the
Degree of Master of Science in Technology

A Directed Project Report

By

Michael R. Ulmer

Committee Member	**Approval Signature**	**Date**
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Dedication

To my wife Jackie: for her continuous support and encouragement, without her I would not have been able to accomplish all I have.

Thank you

Acknowledgement

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Executive Summary

The purpose of this project was to develop a hybrid version of a work place safety course for use at Ivy Tech Community College. Students attending Ivy Tech in the Industrial Technology program currently have little options to taking classes other than the traditional face-to-face method, which creates certain challenges for the students. With the creation of a hybrid course, students who take this class are required to drive to campus less each week, resulting in additional savings to the students. A hybrid course also gives the students another option to the traditional delivery model, resulting in increased learning potential for those students looking for an alternative to in-class instruction.

For this project the current course material was evaluated to determine which material would be appropriate for hybrid delivery using BlackBoard as the classroom management software. Once the content was determined, the material was modified to run on BlackBoard and the course shell was developed. Lastly, the course outline and syllabus was created for the new hybrid course.

The result of this project helped determine the effectiveness and future need for additional hybrid course offerings in the Industrial Technology program at Ivy Tech.

Introduction

The current era is that of great technical advancements, with new technologies being developed almost daily. At the same time, the country is also facing severe economic restraints, especially in the education sector. With rising gas prices, and lower personal incomes, students are finding it more difficult to afford the drive to campus to attend class. This is most evident in the community college system, where most campuses are commuter campuses that require some students to travel as much as 50 miles to attend school.

When the reality of the economic situation is combined with major technological advancements in online educational development, the following question arises: Will the creation of an occupational safety hybrid course give students a flexible alternative to taking face-to-face courses.

This project focused on the challenges of developing a hybrid occupational safety course from a traditional face-to-face course while still meeting the required college course objectives as well as meeting the required OSHA objectives for the training.

Statement of Problem

Ivy Tech does not currently offer a hybrid version of the Occupational Workplace Safety course, which would afford students the option of taking the course off campus.

Project Question

Will the OSHA Outreach training guidelines be adaptable to a hybrid model format, resulting in a hybrid course that still meets the OSHA General Industry 30 hour certification?

Significance

With the reality of tough economic times for today's students and colleges, both groups face individual challenges to meeting their objectives. For colleges, especially community colleges, increased enrollment has led to overcrowding and classroom shortages. For commuter students, the tough economy has increased the need to attend college to find a better job, but has left them financially drained and struggling to afford the gas required to drive to campus. Hybrid learning through the use of technology helps support the students that live greater distances from campus, as well as adult students who work full time and have difficulties fitting traditional classes into their work schedules (Olapiriyakul & Scher, 2006).

Hybrid learning courses have been found to be one alternative to help alleviate classroom shortages (Parsons & Ross, 2002). Through the use of hybrid courses,

traditional face-to-face lectures can be blended with online material to create a unique learning environment for the students. The blend of traditional on campus time and online learning time can be tailored to meet the needs of a specific course, but most studies point to a 50/50 mix as being a good starting point. Through the use of hybrid courses, commuting time can be reduced, resulting in reduced costs to the students; this in turn helps students achieve their educational goals (Bleed, 2001). Through the use of hybrid courses, class times can be more flexible, which helps the students who are working take more classes consistently.

When reviewing the existing body of research on hybrid learning, most of the research focuses on taking fully online courses and building back in some face-to-face components to create a new hybrid course. This project will explore the challenges faced when taking an existing traditional face-to-face course and building in new online material to create a new hybrid course.

Statement of Purpose

The purpose of this study was to create a hybrid version of an existing workplace safety course to provide students with alternative delivery options that are currently not available.

Definitions

Hybrid learning – "[one that] integrates online learning with traditional face-to-face class

activities in an intentional pedagogically valuable manner, and in a manner where

between 20 and 70% of course content and activities are delivered online."

(Arbaugh, Desai, Rau, & Sridhar, 2010) p. 244.

OSHA – Occupational Safety & Health Administration

Outreach Training Program – The OSHA Outreach Training Program teaches workers

about their rights, employer responsibilities, and how to file a complaint as well

as how to identify, abate, avoid and prevent job related hazards (www.osha.gov).

Outreach Training Requirements – It is the responsibility of the authorized OHSA trainer

to ensure the following requirements are met:

- Training delivery – class hours, class duration, and class style

- Training topics – coverage of mandatory, elective, and optional topics

- Topic length – OSHA recommends spending one hour on each topic

- Training materials – trainers must use required curriculum as noted by OSHA

- Student requirements – to receive a completion card, students must attend all
  required elements

- Class records – training records must be kept for five years, including; sign in
  sheets, contact information, topic outlines, and class documentation

SWOT analysis – a strategic planning method used to evaluate the strengths, weaknesses,

opportunities, and threats involved in a project

Assumptions

The assumptions in this research include:

- There will be approval granted for the development of a hybrid safety class
  given by the college.

- The newly created hybrid course will be developed.

- The OSHA General Industry 30 hour training guidelines will fit into a hybrid delivery model.

Limitations

The limitations in this research include:

- The course development was limited to all existing Ivy Tech policies and procedures for hybrid course development.

- The project was limited to the current technology available at Ivy Tech for delivering hybrid course content.

- The researcher was using an existing version of the INDT 106 course and used the existing required topics and objectives to develop the hybrid version of the class.

- The researcher was using existing OSHA Outreach training guidelines to develop the hybrid version of the class

Delimitations

The delimitations in this research include:

- The project would not be conducted if approval for development of the hybrid course was not granted by Ivy Tech.

- The project was not focused on any other course, other than the hybrid version of INDT 106.

- The project was limited in scope to just the development of the hybrid course.

Summary

This section outlined the project for answering the main project question as stated in the introduction. This section covered the statement of the problem, research question, and significance of the problem, statement of purpose, definitions, assumptions, limitations and delimitations of the study. The next section reviewed the literature, as well as background information on OSHA, and started presenting the case for hybrid learning, from the student's perspective as well as the faculty and administrations perspectives.

Literature Review

This chapter provided an overview of the literature topics as they relate to hybrid learning and OSHA. For the purpose of this review; studies on hybrid learning, blended learning, as well as the use of E-learning are used.

Introduction

Hybrid learning is a relative new term, which is given to describe a course in which some material is delivered by traditional means, and the rest of the material is delivered online. Arbaugh, Desai, Rau, and Sridhar (2010) define hybrid learning as a course that "integrates online learning with traditional face-to-face class activities in an intentional pedagogically valuable manner and in a manner where between 20 and 70% of course content and activities are delivered online." (p. 40). In reviewing the existing body of knowledge on this subject, the terms blended learning and e-learning were also used to describe this type of course delivery. For the purpose of this review, the term hybrid learning was used to provide consistency and encompassed both blended learning and e-learning concepts.

The review of existing literature aid's in supporting the question: Will the OSHA Outreach training guidelines be adaptable to a hybrid model format, resulting in a hybrid course that still meets the OSHA General Industry 30 hour certification?

From the literature review the researcher built support for the question by first reviewing the need for OSHA standards and then establishing the need for hybrid courses, and finally reviewing the advantages and disadvantages from the perspectives of the student, faculty, and university administration.

The need for OSHA

From the early 1900's the need for safety has been recognized by industry, but has been slow to develop. In the early days of the industrial safety movement there were many large-scale accidents that highlight the continuing need for safety. A few of the most disastrous included a 1907 mining accident in which over 3,200 workers died, and the Hawk's next tragedy of the 1930's in which unprotected workers were exposed to high levels of silica dust over the course of several years which resulted in large numbers of fatalities (Goetsch, 2010). Because of these and many other accidents, the need for a comprehensive safety organization quickly developed.

There are many individual organizations that were concerned with safety during this development, such as; National Safety Council, National Fire Protection Association, American National Standards Institute and the American Insurance Association to name a few. Even though there were many organizations that helped promote safety, they did so independently of each other for the most part, only focusing on one small element of the big picture. What was needed was an integrated approach to safety and health, one that would bring a comprehensive set of standards that could be applied to all industries. This

goal was finally reach in 1970 with the passing of the Occupational Safety and Health Act. The OSHA Act created the Occupational Safety and Health Administration, which now had the federal authority to enforce safety standards across the board to all industries. For the first time, our country had a set of standards and regulations in place that could hold employers accountable for their employee's safety.

The need for OSHA Outreach Training

OSHA has a simple mission, "To assure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance" (www.osha.gov). As stated in the mission, OSHA recognized the need for training if they wanted to achieve their goals of reducing workplace accidents and injuries. In support of their goal, OSHA created the outreach training program. Through the outreach program, OSHA offers a wide selection of training and classes designed to promote worker awareness and recognition of safety and health hazards. One of the main training programs is the OSHA General Industry 30 hour worker program.

The 30 hour outreach program is a voluntary program that provides training to make workers more knowledgeable about workplace hazards and their rights. The training emphasizes the ability of the worker to recognize, avoid, and report workplace hazards. Through completion of the OSHA 30 hour course, workers can receive a certification which signifies that they have completed the course material. The 30 hour program provides required training in the following subjects:

- Introduction to OSHA

- Walking and Working Surfaces

- Electrical

- Exit Routs, Emergency Action Plans and Fire Protection

- Personal Protective Equipment

- Materials Handling

- Hazard Communication

- Managing Safety and Health

In addition to these required subjects, there are the following elective subjects:

- Hazardous Materials

- Permit Required Confined Spaces

- Lockout/Tagout

- Machine Guarding

- Welding and Cutting

- Bloodborne Pathogens

- Fall Protection

- Safety and Health Programs

- Powered Industrial Vehicles

The hours spent training in each topic must be recorded by the authorized OSHA trainer and the full program must consist of at least 30 hours of material (www.osha.gov).

Through this training, OSHA mission is to ensure that all workers become more knowledgeable about workplace hazards, and their rights and protections afforded by the OSHA Act. To date OSHA has made significant improvements in regards to worker safety. In the years from 2003 to 2010, the number of workplace fatalities has gone down from 5575 to 4547 which is a significant improvement and a direct result from the increased outreach training that OSHA provides (www.osha.gov).

The need for hybrid learning

The main difference between hybrid learning and other learning pedagogies is in how the course material is delivered to the students. The traditional face-to-face content delivery is defined as having both the students and the instructor in the same classroom, interacting on a one-to-one basis. Gilbert and Flores-Zambada (2011) define the online course as one that has no material delivered face-to-face. Based on these definitions it can be simply said that traditional learning happens in a physical classroom with interactions between the students and the instructor, while online learning happens at a distance with no physical interactions between students and instructors.

Hybrid learning seeks to combine the best practices of traditional learning with the best practices of online learning to deliver a truly unique course experience to students. In today's environment of shrinking funds and rising costs within education, hybrid learning seeks to position itself as the better content delivery system going forward. Graham (2006) gives two strong reasons for the use of the hybrid format. First is improved pedagogy, learning becomes more interactive and applied when using the

hybrid format. Secondly, the hybrid model allows for increased access and flexibility for students. With the rising cost of gas over the past year, some students are finding it increasingly difficult to drive to campus; this is particularly true for community colleges. The increased flexibility afforded by the hybrid model could be the answer for this growing problem.

Several studies cite the advantages of using the hybrid learning model over both the traditional face-to-face and online formats. Hensley (2005) points to several studies conducted at the University of Wisconsin-Milwaukee and the University of Central Florida that found students learn more, write better papers, perform better on tests, and complete higher quality class projects when taught using the hybrid format. Other benefits of using the hybrid system include: better student participation, better success rates, and lower dropout rates as compared to online classes (Dziuban, 2006). The hybrid learning model also seeks to take advantage of the new technologies that have been developed in recent years that allow students to interact in a virtual world as well as in the physical world. Some technologies are already in use, such as web based tutorials, simulations, Web CT, and online labs, but new technologies are starting to make their way into the classroom as well. One example of a newer technology is the use of virtual classrooms, such as those found in the online program Second Life. Through the use of an online classroom, students can attend class virtually from any remote location, but still have the one on one interaction of the physical classroom.

From the review of existing research it was clear that there is a need for a "blending" of the traditional classroom with the flexibility of the online delivery method,

and that the hybrid format has shown promise in meeting this need. This researcher's project will help in supporting and strengthening this position on hybrid learning.

Designing & developing a hybrid course

Most of the literature reviewed for this project focused on developing and designing a hybrid course from an existing online course. While the transition from online to hybrid seems to be most common, hybrid courses can be developed from scratch or in the instance of this project, from an existing face-to-face course.

The research reviewed did not establish a one-size-fits-all, step-by-step outline for developing a hybrid course, but did provide several components that seemed to be shared by many of the studies. Gilbert and Flores-Zambade (2011) listed the following four components as being needed to design a quality hybrid course: in-class informational sessions, a course management system, in-class lectures, and laboratory time. Following is a brief description of each component and the benefit of its use.

The in-class informational sessions allowed students the opportunity to interact with the instructor face-to-face, and to have questions answered, or receive explanations on the online assignments. The informational sessions also allowed the students to interact with each other in the classroom setting, and develop student bonds that are helpful in persisting through the semester. Informational sessions also allowed for group discussions outside of the message boards used in most online-only classes, this provided for unique opportunities for in-depth challenges of student points of view that cannot be easily done in online discussions (Gilbert & Flores-Zambade, 2011).

The use of a course management system (CMS) was a consistent theme in most hybrid and online only courses. Course management systems have been used for quite some time and have shown proven benefits of their use. According to Gilbert and Flores-Zambade (2011) a CMS can provide "one stop shopping" to students for items like course notes, lectures, guides, handouts, grades, and course instructions. A CMS also allows for the collection and grading of course material, which is a huge time savings for the instructor. This proves very useful in the hybrid format because instructors do not meet with students as much as in traditional class formats.

Even though most course content can be delivered online, having in-class lectures is still a major component of the hybrid format. McCray (2000) stated that if the required class information can be migrated to a virtual environment, then valuable class time can be used for other uses. Most studies point to the fact that due to time constraints in traditional face-to-face classrooms, there is only time to deliver the required information and never time to explore concepts more in depth.

Having in-class laboratory sessions allows the students to apply the knowledge gained through online lectures and see it used in real life scenarios. Labs are particularly important in traditionally in-class only disciplines like Industrial Technology. For classes like basic electricity or fluid power, the lab sessions are used to reinforce lecture concepts and theories, and allow students the opportunities to test and apply the knowledge gained from the class.

The design and development of hybrid courses does not come without its challenges. According to Gilbert and Flores-Zambade (2011) one of the biggest

challenges is the student fear factor. Students who have not participated in online courses or other forms of blended learning might be hesitant to participate in a hybrid course for fear of the unknown. Other challenges range from deciding what content needs to be moved from the in-class sessions to the online sessions, and how to adopt and use the new technologies that are becoming available. Whatever challenges arise, the hybrid model must have at its core, a student centered approach. In the words of Singh (2002), "To be successful, blended [teaching]…needs to focus on combining the right delivery technologies to match the individual learning objectives and transfer the appropriate knowledge and skills to the learner at the right time." (p. 476).

Hybrid learning from the student's perspective

One particularly useful study gauges student perspectives of a hybrid course through the use of a SWOT analysis. Jackson and Helms (2008) recorded the following results of the SWOT analysis for the hybrid course studied (p. 9-10):

Interaction with faculty: strength

- More time to think through questions and give thorough answers
- Easier interaction with the professor

Interaction with faculty: weakness

- Much less human interaction
- Opportunity for miscommunications
- Not enough face time with instructor

Interaction with other students: strength

- Can learn from other students comments and threaded conversations

- Allows to build contacts, networking

- Provides flexibility for students to interact with other students on assignments

Interaction with other students: weakness

- Do not get to know classmates as well as in a normal class

- Less opportunity for true study groups to form, based on geographical location

Based on the results, Jackson and Helms (2008) conclude that from a student's perspective, the hybrid model tends to highlight the best and worst of both the traditional and face-to-face course formats. Depending on the individual student's learning style, one student's perceived weakness could be another student's strength.

In general, most studies reviewed have concluded that a hybrid model of learning has led to better student outcomes, as measured by student satisfaction and course performance. In a recent study at the University of Wisconsin, Milwaukee campus, 80% of students that participated in a hybrid class reported a satisfying experience, and would recommend a hybrid course to fellow students (Aycock, Garnham, & Kaleta, 2002). Students reported that flexibility, both in managing their own class time, as well managing class scheduling, was a main benefit of taking a hybrid course. Another benefit from the student perspective was the increase in class performance gained from using the

hybrid format. According to Garnham and Kaleta (2002), students learned more in hybrid courses as compared to traditional courses. By participating in hybrid classes, students tend to develop skills not acquired in traditional classes. According to Lindsay (2004) "without the live interaction in a classroom, distance learners must be able to process written materials and texts at least as efficiently as they process lecture and discussion" (p.16). Lastly, Garrison and Kanuka (2004) state that there is overwhelming evidence that students participating in hybrid courses achieve as well, or better, on exams when compared to traditional or online only courses.

As with all learning formats, there are some challenges that face students participating in hybrid courses. According to Garnham and Kaleta (2002) there are four main challenges: the expectation that fewer classes mean less work, inadequate time management skills, problems with accepting personal responsibility for learning, and difficulty with sophisticated technologies.

Based on the literature reviewed, most studies support the claim that student outcomes do increase from hybrid learning as measured by student's perspectives of the course, which in turn supports this researcher's question on the need to develop a hybrid safety course.

Hybrid learning from the faculty and administrative perspective

Based on the literature review, faculty perspectives have been somewhat the same as those of students. According to a study done at the University of Wisconsin,

Milwaukee, 100% of the faculty that participated in teaching a hybrid course reported a satisfying experience, and all would recommend teaching a hybrid course to other faculty (Aycock et al., 2002). Some of the benefits mentioned by faculty included: improved student/teacher interactions, increased student learning, and more flexibility in teaching. According to one faculty member, as reported by Garnham and Kaleta (2002), "My students have done better than I have ever seen; they are motivated, enthused and doing their best work" (p. 3). Faculty also cited the ability to take advantage of new technologies as a way to continually improve their hybrid courses as a huge benefit.

From an administrative perspective, the use of hybrid courses offers some real opportunities. According to Vaughan (2007), hybrid courses can enhance a university's reputation, as well as allow for greater access to a university, and probably most important, can greatly reduce operating costs. Being able to expand access to a greater range of students through the use of hybrid learning can have a direct impact on student enrollment growth. Enrollment growth will be used to measure student outcomes from the development of a new safety hybrid course. The review of existing literature would seem to support the claim that hybrid learning will have a positive impact on student enrollment, most notably for students that are faced with balancing school work with family or work commitments, which is a majority of the community college demographics.

As with students, there are challenges faced by faculty and administrators in regards to courses being taught in the hybrid format. According to Dziuban and Moskal (2001) the number one challenge for faculty is the increased time commitment associated

with teaching a hybrid course. On average, a hybrid course can take double or triple the amount of time to develop then a similar traditional course. Most faculty felt though that the time requirements would decrease as faculty members became more familiar with the hybrid format.

According to Vaughan (2007) there are numerous studies that outline the challenges faced by university administrators in regards to hybrid learning. Some of the biggest challenges include: alignment with college goals and policies, resistance to organizational change, and the lack of experience with collaboration within the college.

Based on the existing body of knowledge reviewed, there seems to be widespread support from faculty and willingness from administrators to support the need to increase the use of hybrid learning. These findings also support this researcher's claim that there is a need for a safety hybrid course, and that faculty would be willing to devote the time necessary to develop the course, and that there would be support from the college administration to ensure course success.

Summary

This section has provided a brief introduction and background of the literature related to the need for OSHA training and for hybrid learning. From the review, the case can be made for both the need and the ability to design a college level safety course. Based on previous studies from the students', faculty and administrations' perspectives, hybrid courses seem to offer real benefits as compared to teaching fully online or traditional face-to-face courses. This project added to the position that the development

and use of a hybrid safety course is a better alternative to a traditional or online safety

courses, and used the results of this study to expand the body of knowledge in this field.

Procedures Employed

This chapter provided an overview of the framework and methodology used in developing the project. The methods available to develop the hybrid course were evaluated and a summary of the results discussed.

Previous research into the use of hybrid learning has mostly focused on taking an existing online only course and building back in some classroom content to create a hybrid course. This project examined the use of a hybrid courses from a different perspective and looked at developing a hybrid course from an existing face-to-face course.

Methodology

This project developed a hybrid safety course based on an existing course, Ivy Tech INDT 106 Workplace Safety that was already in place. The hybrid course was developed as follows:

- Complete instructor training by attending and passing the online faculty training certification course.
- Review existing course content.
- Determine which course material was appropriate for hybrid delivery, ensuring that a minimum of 30 hours was delivered out of class.

- Took existing course material identified for hybrid format and modify to administer online, ensuring to meet OSHA standards for awarding certification.

- Developed classroom management shell to use for hybrid class.

- Developed course outline and syllabus.

The hybrid course was developed for use at Ivy Tech Community College, at the Lafayette Indiana campus. The author is currently employed by the college as the Industrial Technology Department Chair, and teaches the occupational safety course which will serve as the base in developing the hybrid course. Once a hybrid version has been developed, the course will be made available for student enrollment.

Instructor Training

Instructors are required to attend and pass the Ivy Tech online instruction certification before teaching or developing an online or hybrid course. The certification is required to ensure that the instructor is well trained in both the class management system used for delivering online and hybrid content, as well as the various methodologies and tools available for developing a hybrid course.

Review of Existing Content

As the current instructor for the traditional work place safety course, the next step after becoming certified to teach a hybrid course was to review the current course material to see what could be developed and delivered through a hybrid model. The traditional course follows the structured required by OSHA to award students their

General Industry 30 hour certification card. The goal in developing the hybrid version of the safety course was to give students an alternative to the face-to-face course while still maintaining the ability to award the OSHA certification. Because OSHA does not allow their material to be delivered fully online and still qualify for the certification, the current OSHA specific material was delivered during the on campus hours of the hybrid course.

Based on maintaining the required in class hours to satisfy OSHA, the rest of the current course content was re-developed to be delivered through a hybrid model, taking advantage of the BlackBoard 9 classroom management software.

Selection of Hybrid Delivery Content

Once the required in-class OSHA material had been identified using the official Standards and Training Guidelines, the rest of the current material was examined for use in the hybrid delivery. In addition to using the OSHA specific information, the current class also used many supplemental presentations delivered by PowerPoint, as well as the use of movies, web articles, and handouts. For this project the supplemental information was selected for hybrid delivery along with the course quizzes and exams. The current traditional course utilized in-class time to administer quizzes and exams. This project transitioned the assessment material to Blackboard to be included in the hybrid make up of the course.

Modifying Selected Course Material for Hybrid Delivery

Since most of the supplemental material consisted of PowerPoints and web based information, there was some modification to the material needed to run on the class

management system. All the safety material was uploaded into BlackBoard for student access.

<div align="center">**Developing Classroom Management Shell**</div>

Ivy Tech currently uses BlackBoard 9 as their classroom management software. This project identified supplemental material along with the quizzes and exams and populated the new hybrid course shell. The project used the default tabs in BlackBoard. The course content was housed within the "Class Resources" folder. Within the resources folder there was a weekly folder for each of the 16 weeks in the semester. Within each weekly folder, there was the course information for that week's topic, such as; PowerPoint's, web links, handouts, etc. Within the "Class Sessions" folder there were also weekly folders. Weekly quizzes were housed within these folders so that once a student completed the weekly readings, he/she were required to open up the corresponding quiz and complete it for the week. The use of weekly quizzes allowed the instructor to monitor the progression of the student as well as gauge the students understanding of the course material. Traditionally the course quizzes and exams have been given in class as Word documents, for the transition to administering online through the use of BlackBoard, the quizzes and exams were re-typed into the BlackBoard test generator for administering online. One primary benefit to using Blackboard housed exams and quizzes are that once entered into BlackBoard, the software self-grades the assessment and records the grade into the course grade book saving the instructor valuable time.

Develop Course Outline and Syllabus

Once the course material was separated into the required in-class OSHA material and the hybrid supplemental material housed in BlackBoard, a course outline was developed. The course outline was formatted by the week to match the corresponding weekly folders in BlackBoard. In addition to developing a weekly course outline, a course syllabus was developed that explained the hybrid format and presented information on the course structure. See appendix 1 for course outline and syllabus.

Summary

This section outlines the methods used to develop the hybrid course and the procedures used for implementing the new course. The following sections report the findings of the project and discuss the conclusions and recommendations from the project.

Findings

The online faculty training certification course was very helpful in the development of the hybrid course. The training covered topics ranging from developing hybrid learning pedagogies to learning how to set up discussion boards in BlackBoard. The main benefit of this instructor training in regards to this project was the information learned in developing the BlackBoard course shell. For this project, all exams and quizzes are housed in BlackBoard, with the knowledge gained from the training; the process of creating the assessment material was instrumental in completing this project.

In reviewing the existing course content for determination of which material would be delivered by the hybrid method proved very straightforward. Since the project goal was to develop a hybrid version of the workplace safety course, which still meets the OSHA general industry guidelines, all the required OSHA material was delivered in the classroom. Once the 30 hours of OSHA material was separated from the other course content, it was easy to determine what should be housed in BlackBoard for hybrid delivery.

External Validation

The end result of this project was a developed hybrid version of the workplace safety course to run at Ivy Tech. In accordance with Ivy Tech's Academic Policy and

Procedures Manual (APPM), section 5.2, delivery of distance education is created for the following purposed:

- To extend access and meet community needs

- To meet needs of students

- To meet College needs to share credentialed faculty across campuses

- To increase enrollments

- To respond to higher education marketplace

(Ivy Tech APPM, 2011)

The development of the project course meets the needs of both the students and the college as well as has the potential to increase course enrollments, thus meeting the requirements set forth by Ivy Tech for the development of a hybrid course.

In addition to meeting Ivy Tech requirements, I found the developed course also meets OSHA training delivery requirements for issuing the 30 Hour General Industry Certification. Per OSHA, in order to award the 30 Hour Certification, the outreach training must be delivered per the following guidelines:

- Training is limited to a maximum of 7.5 hours per day

- 30 hour classes must take a minimum of four days

- At minimum, a 10 minute break must be provided after every two hours of instruction.

- Trainers may break the class into time segments to deliver the training over multiple days, weeks, or months. Each segment must be a minimum of one hour in length.

- Each outreach class must be completed within 6 months of its start date.

- Training should include workshops, cases, exercises, and demonstrations that involve student participation and interaction.

- Videos cannot comprise more than 25 percent of the time spent training.

(www.osha.gov)

As another means to determine the validity of the developed course, the course was reviewed by an Ivy Tech faculty member that had experience in developing hybrid courses and has successfully taught hybrid courses for the past few semesters. In reviewing the hybrid safety course, the faculty member confirmed that the "hybrid course as presented follows all guidelines required by Ivy Tech Community College and is in line with the statewide strategic goals for increasing student access to course offerings through the use of technology" (S. Ely, personal communication, April 19, 2012). The course has been approved by the Dean of the School of Technology and is currently available for students to enroll in for the fall semester. The faculty member also recommended that after the course has completed, that a comparison between the hybrid course and the traditional course could be done to examine the pass rates between the two courses.

With the existing course content separated, the remaining non OSHA material to be delivered through the hybrid model had to be modified to run in BlackBoard. The hybrid material consisted of exam, quizzes, supplemental readings, and individual lab activities to be performed outside of class. Modifying the exam and quiz content to run in BlackBoard also was a straight forward process. BlackBoard allowed for the uploading of existing exam files, or new exams created within BlackBoard. For this project new exams were created and uploaded to BlackBoard as Word files and the quizzes were recreated within BlackBoard. All supplemental readings were currently in PDF format which was easily uploaded into BlackBoard as well. The out of class activities were comprised of Word documents which were uploaded to BlackBoard.

Developing the classroom management shell for the hybrid course was not difficult, but proved very time consuming. The recreation of all chapter quizzes to run in BlackBoard took the most time. The main benefit of housing the quizzes in BlackBoard, was that once the student has completed the quiz, BlackBoard self graded the assessment and record the student grade into the class management grade center. Using the course copy function was also very helpful in developing the course shell for this project. The course copy function allowed for the transfer of existing course material from the traditional workplace safety course shell into the new hybrid course shell, thus saving time and effort in the development of the course. Setting up the BlackBoard material by weeks also proved very helpful, each week's material in BlackBoard corresponds to the course outline so students know exactly where to go in BlackBoard to find that weeks content.

In developing the hybrid course outline and syllabus, having the existing course material to modify made the process a quick transition. The majority of the course syllabus remained the same, but changes were made to reflect the new course times, and a new section was added explaining how the hybrid model would work in regards to out of class material. The course outline required the most work for transitioning to the hybrid delivery format. The existing course outline showed all material being delivered in-class during two class sessions. The hybrid course outline required that all the material be separated into the OSHA required in-class content and the BlackBoard housed out of class content. Both types of material had to be explained in the course outline. Setting up the hybrid course outline by weeks allowed the outline to match the content in BlackBaord. Each week of the hybrid course outline shows the in class material to be covered, and then also shows the out of class work due for that week. The course outline will serve as a guide to students to keep them on track for the semester and at the same pace with other students in the class.

Conclusion

In conclusion the completion of the project indicated that a hybrid version of a workplace safety course could be developed from an existing traditional face to face workplace safety course. This project indicated that an OSHA certification could still be delivered to students that successfully pass the course.

Recommendations

Based on the findings from developing a hybrid version of a workplace safety course that meets the OSHA requirements for the General Industry 30 card, this author recommends that the hybrid course be offered to students in the next available semester.

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Appendix

Ivy Tech State College
Lafayette/Regional Syllabus
8/23/2012

Course Information   Semester 1220

Course and Section Number: INDT 106-30D   **Credits**: 3.0
                                  CRN# 20496

Course Title: Introduction to the Workplace   **Contact Hours:** 2.5 Lecture
                     and Safety   1.5 Hybrid

Prerequisites/Corequisites: None

School of Technology   **Program**:   Industrial Technology

Days: M   **Time:**   11 :30 – 2 :00pm

Building: Griffin Hall   **Room:**   118

Faculty Information
Name: Mike Ulmer
Office Location: Griffin Hall
E-mail address: mulmer2@ivytech.edu
Contact Phone Number: (765) 269-5149
FAX number: (765) 269-5246
Office Hours: By appointment only
Division Office: (765) 269-5229

Catalog Description:

Introduces basic safety instruction including OSHA requirements and other concerns (MSDS, confined space, lock out/tag out, zero energy state, hazardous materials, storage of flammable materials, storage of fuel gas and high pressure gas cylinders, portable powered tool safety, hand tool safety, record keeping, training, employer enforcement of safety regulations, right to know, etc.). Includes an introduction to measuring instruments, hand tools, portable powered tools, and procedures that are pertinent to the mix of specialties on the campus. Lab projects will be designed to reinforce safety procedures and develop competency levels in using the measuring instruments, hand tools and portable powered tools introduced in the course.

General Course Objectives:

Upon successful completion of this course the student will be expected to:

1.   Conduct assigned tasks in a safe and workmanlike manner while working either independently or in small groups.
2.   Discuss the need for workplace safety and workplace safety training programs.
3.   Prepare an overview of the record-keeping requirements associated with workplace training.

4. Discuss the oversight function of organizations such as OSHA, IOSHA, and insurance carriers.
5. Interpret Material Safety Data Sheets.
6. Transcribe regulatory requirements associated with MSDS.
7. Select and demonstrate how to properly use personal protective equipment required for common workplace tasks.
8. Discuss the general OSHA requirements for a working environment including (but not necessarily limited to) walking-working surfaces, means of egress, emergency plans, ventilation, occupational noise exposure, blood-borne pathogens, hazardous materials, storage of flammable materials, storage of fuel gas and high pressure gas cylinders, and "right to know."
9. Discuss the requirement of employer enforcement of safety regulations.
10. Prepare an overview of safety requirements associated with materials handling and storage.
11. Compile the general requirements for machine guarding.
12. Analyze and discuss the following: confined space, lock-out/tag out and zero energy state.
13. Perform accurate measurements using the various trade instruments covered in the course.
14. Review the tools introduced in this course by their correct name.
15. Determine the specific purpose and use of the hand and portable powered tools covered in the course.
16. Determine the safety requirements for proper use of the hand and portable powered tools covered in the course.
17. Select proper hand tools to perform assigned tasks.
18. Select proper portable powered tools to perform assigned tasks.

Additional Course Learning Objectives:
Upon successful completion of course objectives, students will receive their OSHA 30 hour card.

Course Content:
- MSDS
- Confined space
- Lock out/tag out
- Zero energy state
- Hazardous materials
- Storage of fuel gas and high pressure gas cylinders
- Portable powered tool and hand tool safety
- Employer enforcement of safety regulations

Required Texts:
Basics of Occupational Safety: 1st edition; Goetsch, David. Prentice Hall

Teaching Methods:
This course will utilize a hybrid delivery model consisting of 2.5 hours lecture on campus and 1.5 additional hours of course work delivered online through the use of the blackboard classroom management system. On campus lectures will comprise of group activities, lab sessions, and

hands on application of the safety course content. The blackboard assignments will include course readings, quizzes, and homework activities. Additional assignments may be scheduled for both inside and outside the class as determined necessary by the instructor.

Grading and Evaluation:
Graded Elements: quizzes, tests, homework, lab assignments, final exam

Final grade calculation: Homework
                                    Lab work
                                    Quizzes
                                    Participation
                                    Mid Term
                                    Final Exam

Grading Scale: 90 – 100% = A
                                    80 – 89% = B
                                    70 – 79% = C
                                    60 – 69% = D
                                    Below 59% = F

Additional Assignment/Grading Information:
Students must meet the 30 hour minimum in class, as well as obtain a 75% or better on final exam to receive the OSHA 30 card. It is possible a student can pass the class and NOT receive an OSHA card if the requirements set forth by OSHA are not met. All questions should be directed to the instructor for clarification.

Makeups/Late submittals:
At the instructor's discretion; no in class assignments, quizzes, or labs will be allowed to be made up. **All assigned work is due to be turned in at start of class, work handed in after start of class will be considered late and graded accordingly and/or may not be accepted.** It is the student's responsibility to make arrangements with the instructor for all other missed assignments.

Attendance:
Attendance at scheduled class meetings or other activities assigned, as part of a course of instruction is essential. Accordingly, instructors are responsible for establishing and enforcing attendance policies, maintaining attendance records, and excusing students only for bona fide reasons. This procedure is necessary to ensure student achievement, to maintain morale, and to maintain the integrity of program quality, financial assistance, veterans benefits and special funding. Occasionally, personal circumstances can arise which render it impossible for students to attend scheduled classes and activities.

Whenever such circumstances can be anticipated, the College expects students to confer with instructors to obtain authorization for absence. Such advance notification provides the opportunity for instructors to offer the students the option of making up the material missed. In case of unforeseen circumstances, students should also consult with their instructors to arrange for makeup work.

Last Date and Responsibility for Withdrawal:

You may withdraw from most courses online through your Campus Connect account. Course withdrawal may be done in person at the School Office, Advising Center, or Registrar's Office. Your student ID is required for in-person withdrawals. Withdrawing by phone requires verification of your student identification number ("C" number). Email withdrawals are acceptable for Internet courses as long as the body of the email includes your student identification number (C#); semester enrolled in this course; and course title, course number, and CRN number located on your schedule or at the top of the course syllabus (Sample: English Composition, ENGL 111 01D, CRN 12345).

Withdrawing from a course may delay progression toward program completion and may impact your financial aid. If you must withdraw, consult with your academic advisor and with a financial aid advisor, if applicable.

The last day to withdraw from this course is **November 13, 2012**.

Additional Class Information

None noted at this time.

Academic Honesty Statement:

The College is committed to academic integrity in all its practices. The faculty value intellectual integrity and a high standard of academic conduct. Activities that violate academic integrity undermine the quality and diminish the value of educational achievement.

Cheating on papers, tests or other academic works is a violation of College rules. No student shall engage in behavior that, in the judgment of the instructor of the class, may be construed as cheating. This may include, but is not limited to, plagiarism or other forms of academic dishonesty such as the acquisition without permission of tests or other academic materials and/or distribution of these materials and other academic work. This includes students who aid and abet as well as those who attempt such behavior.

Conduct:

Cell Phones in Class: Cell phones and pagers should be turned off when you are in class. If your cell phone or pager rings during class, points may be deducted from your grade. If you have unusual circumstances, you should talk to the instructor.

Any use of cell phones and pagers during a quiz or test is strictly prohibited. Any student who violates this policy will earn a zero on the quiz or test.

Emergency calls may be addressed to the Registrar's Office at (765) 269-5119; the Registrar's staff will have you contacted in the classroom. After 5:00 p.m., calls may be directed to the main switchboard at (765) 269-5100. In the event of an emergency after 9:00 p.m., calls should be directed to the security officer on duty at (765) 269-5254, (765) 430-2882, or (765) 430-2883.

Copyright Statement:
Students shall adhere to the laws governing the use of copyrighted materials. They must insure that their activities comply with fair use and in no way infringe on the copyright or other proprietary rights of others and that the materials used and developed at Ivy Tech Community College contain nothing unlawful, unethical, or libelous and do not constitute any violation of any right of privacy.

ADA Statement:
Ivy Tech Community College seeks to provide reasonable accommodations for qualified individuals with documented disabilities. If you need an accommodation because of a documented disability, please contact the Office of Disability Support Services at the beginning of each semester. The Disabilities Services Coordinator is Tony Criswell; he is located in the Learning Resource Center, Ivy Hall Room 1157F. If you will require assistance during an emergency evacuation, notify your instructor immediately. Look for evacuation procedures posted in your classrooms.

Extra Assistance:
The Student Support and Development Advisor whose office is located in Ivy 1145, can provide academic counseling to assist with general academic and daily life management skills, such as time and stress management. He can also provide limited personal counseling and referral to outside assistance agencies. Tony Criswell, Disability Services Coordinator in Ivy 1157F, provides additional assistance for special needs students.

Virtual Library
The Ivy Tech Virtual Library is available to students on- and off- campus, offering full-text journals and books and other resources essential for course assignments. Go to http://www.ivytech.edu/library and choose the Virtual Library link for your campus.

E-mail:
E-mail communication from the College is directed to the online student system. Students are responsible for checking their e-mail accounts, even if they also use other e-mail accounts. Please refer to the Ivy Vine Student Handbook for more information.

Assessment:
Ivy Tech State College is committed to graduating students who have the appropriate technical and general education skills. Each approved technical program in the College annually assesses its program graduates for technical competence. As all graduates are to be assessed for technical

competence, students are expected to participate in assessment activities as required by their program. General Education skills are assessed through an authentic assessment project that uses work submitted by students as a part of their regular course requirements.

Course (SUMMA) Evaluations:
Course evaluations by students will be conducted during the fall and spring semesters using the College's "Student Evaluation of Instruction" form.

Emergency Procedures:
Please note emergency evacuation procedures posted in the classroom.

Certification and Licensing Statement:
Ivy Tech cannot guarantee that any student will pass a certification or licensing exam. Your success will be determined by several factors beyond the instruction you are given in the classroom including your test-taking skills, your willingness to study outside of class, and your satisfactory completion of appropriate practice exams. Certification and licensure exam questions are drawn from databases of hundreds of possible questions; therefore, a thorough understanding of the subject matter is required. The goal of Ivy Tech in providing a certification exam studies class is to assist you in understanding the material sufficiently to provide a firm foundation for your studies as you prepare for the exam.

Right of Revision
NOTE: This syllabus and the information contained within it are subject to change without notice.

Children on campus policy
So that each student may give full attention to the task of learning, and to comply with insurance regulations, children are prohibited from attending classes, exams, clinical, or laboratories with the parent or guardian. Children also may not accompany adults using the Learning Resource Center or open computer laboratory. Students are also discouraged from bringing children to scheduled meetings with a course instructor, faculty, or advisor so that the student's full attention may be focused on the topic of discussion.

If a student brings a child to class, an exam, or a clinical, the student and the child will be asked to leave. Exceptions may be made for instructional activities which meet the course objectives. The student will be responsible for any consequence detailed in the course syllabus for missing the class, exam, etc. Students are encouraged to make alternative arrangements for children in the event of school cancellations, childhood illnesses, and other issues. Unaccompanied children cannot be left in the library.

Assignments and Tentative Course Schedule: <u>Assignments and Tentative</u> <u>Course Schedule:</u>

Fall Semester begins: 8/20/12. There will be no classes September 3, 2012 Labor Day and
November 24-28, 2012 Fall Break. Last Day to Withdraw: November 12, 2012.
Fall Semester ends: December 16, 2012.

Class Meeting	Topic	Assigned Work	Work Due and Exams
Week 1 08/20	Introduction to class. Explain course outline and expectations. Required 2hr Introduction to OSHA	Hybrid work: Review week 1 folder, take quiz on blackboard.	
Week 2 08/27	OSHA Safety/Health Programs Lab: Do OSHA standards activity	Hybrid work: Review week 2 folder, take quiz on blackboard.	
Week 3 09/3	Ergonomics Lab: Job Hazard Analysis	Hybrid work: Review week 3 folder, take quiz on blackboard.	
Week 4 09/10	Lock out/Tag out Lab: Safety Inspections Review for Exam 1	Hybrid work: Review week 4 folder, take quiz on blackboard.	
Week 5 09/17	Machine Guarding Subpart O Lab: Safety Inspections	Hybrid work: **Exam 1 (Intro, WK 1,2,3,4)** Hybrid work: Review week 5 folder, take quiz on blackboard.	

Week 6 **09/24**	Walking & Working Surfaces Subpart D	Hybrid work: Review week 6 folder, take quiz on blackboard.	
Week 7 **10/1**	Fall Protection & Bloodborne Pathogens Lab: Fall Protection	Hybrid work: Review week 7 folder, take quiz on blackboard.	
Week 8 **10/9**	PPE Subpart I & Noise Control	Hybrid work: Review week 8 folder, take quiz on blackboard.	
Week 9 **10/15**	Fire Protection Subpart E & L	Hybrid work: Review week 9 folder, take quiz on blackboard.	
Week 10 **10/22**	Electrical Safety Subpart S	Hybrid work: **Mid Term (WK 5,6,7,8,9)** Hybrid work: Review week 10 folder, take quiz on blackboard.	
Week 11 **10/29**	Hazard Communication Subpart Z & MSDS	Hybrid work: Review week 11 folder, take quiz on blackboard.	
Week 12 **11/5**	Hazardous Material: Flammable and Combustible Liquids	Hybrid work: Review week 12 folder, take quiz on blackboard.	
Week 13 **11/12**	Material Handling Subpart N & Power tool Safety	Hybrid work: Review week 13 folder, take quiz on blackboard.	

	Lab: Safety violation workshop		
Week 14 11/19	**FALL BREAK** **FALL BREAK**	**NO CLASS** **NO CLASS**	

Week 15 11/26	Workplace Violence & Powered Industrial Trucks	Hybrid work: Review week 14 folder, take quiz on blackboard.	
Week 16 12/3	Welding, Cutting Subpart Q Confined Space Subpart J	Hybrid work: Review for final exam	
Week 17 12/10	Safety Jeopardy Review & Final Exam	**BE SAFE OUT THERE**	