

INFORMATION SYSTEMS EDUCATION JOURNAL

In this issue:

4. **A combined MIS/DS Course uses Lecture Capture Technology to “Level the Playing Field” in Student Numeracy**
Karen Popovich, Saint Michael’s College
18. **Involuntary Commitment Application: An Online Training Module**
Kimberly Y. Whitfield, University of North Carolina Wilmington
35. **Treating the Healthcare Workforce Crisis: A Prescription for a Health Informatics Curriculum**
S. Matt Campbell, University of South Alabama
J. Harold Pardue, University of South Alabama
Herbert E. Longenecker Jr., University of South Alabama
H. Les Barnett, University of South Alabama
Jeffrey P. Landry, University of South Alabama
47. **Comparatively Assessing The Use Of Blackboard Versus Desire2learn: Faculty Perceptions Of The Online Tools**
Adnan A. Chawdhry, California University of Pennsylvania
Karen Pullet, American Public University System
Daniel Benjamin, American Public University System
55. **Cloud Computing as a Core Discipline in a Technology Entrepreneurship Program**
James Lawler, Pace University
Anthony Joseph, Pace University
67. **Reasserting the Fundamentals of Systems Analysis and Design through the Rudiments of Artifacts**
Musa Jafar, West Texas A&M University
Jeffry Babb, West Texas A&M University

The **Information Systems Education Journal (ISEDJ)** is a double-blind peer-reviewed academic journal published by **EDSIG**, the Education Special Interest Group of AITP, the Association of Information Technology Professionals (Chicago, Illinois). Publishing frequency is six times per year. The first year of publication is 2003.

ISEDJ is published online (<http://isedj.org>) in connection with ISECON, the Information Systems Education Conference, which is also double-blind peer reviewed. Our sister publication, the Proceedings of ISECON (<http://isecon.org>) features all papers, panels, workshops, and presentations from the conference.

The journal acceptance review process involves a minimum of three double-blind peer reviews, where both the reviewer is not aware of the identities of the authors and the authors are not aware of the identities of the reviewers. The initial reviews happen before the conference. At that point papers are divided into award papers (top 15%), other journal papers (top 30%), unsettled papers, and non-journal papers. The unsettled papers are subjected to a second round of blind peer review to establish whether they will be accepted to the journal or not. Those papers that are deemed of sufficient quality are accepted for publication in the ISEDJ journal. Currently the target acceptance rate for the journal is about 45%.

Information Systems Education Journal is pleased to be listed in the 1st Edition of Cabell's Directory of Publishing Opportunities in Educational Technology and Library Science, in both the electronic and printed editions. Questions should be addressed to the editor at editor@isedj.org or the publisher at publisher@isedj.org.

2012 AITP Education Special Interest Group (EDSIG) Board of Directors

Alan Peslak
Penn State University
President 2012

Wendy Ceccucci
Quinnipiac University
Vice President

Tom Janicki
Univ of NC Wilmington
President 2009-2010

Scott Hunsinger
Appalachian State University
Membership Director

Michael Smith
High Point University
Secretary

George Nezelek
Treasurer

Eric Bremier
Siena College
Director

Mary Lind
North Carolina A&T St Univ
Director

Michelle Louch
Sanford-Brown Institute
Director

Li-Jen Shannon
Sam Houston State Univ
Director

Leslie J. Waguespack Jr
Bentley University
Director

S. E. Kruck
James Madison University
JISE Editor

Nita Adams
State of Illinois (retired)
FITE Liaison

Copyright © 2012 by the Education Special Interest Group (EDSIG) of the Association of Information Technology Professionals (AITP). Permission to make digital or hard copies of all or part of this journal for personal or classroom use is granted without fee provided that the copies are not made or distributed for profit or commercial use. All copies must bear this notice and full citation. Permission from the Editor is required to post to servers, redistribute to lists, or utilize in a for-profit or commercial use. Permission requests should be sent to Wendy Ceccucci, Editor, editor@isedj.org.

INFORMATION SYSTEMS EDUCATION JOURNAL

Editors

Wendy Ceccucci
Senior Editor
Quinnipiac University

Thomas Janicki
Publisher
University of North Carolina
Wilmington

Donald Colton
Emeritus Editor
Brigham Young University
Hawaii

Jeffrey Babb
Associate Editor
West Texas A&M
University

Nita Brooks
Associate Editor
Middle Tennessee
State University

George Nezelek
Associate Editor

ISEDJ Editorial Board

Samuel Abraham
Siena Heights University

Mary Lind
North Carolina A&T State Univ

Samuel Sambasivam
Azusa Pacific University

Alan Abrahams
Virginia Tech

Pacha Malyadri
Osmania University

Bruce Saulnier
Quinnipiac University

Gerald DeHondt II
Grand Valley State University

Cynthia Martincic
Saint Vincent College

Karthikeyan Umapathy
University of North Florida

Janet Helwig
Dominican University

Muhammed Miah
Southern Univ at New Orleans

Bruce White
Quinnipiac University

Scott Hunsinger
Appalachian State University

Alan Peslak
Penn State University

Charles Woratschek
Robert Morris University

Mark Jones
Lock Haven University

Peter Y. Wu
Robert Morris University

Involuntary Commitment Application: An Online Training Module

Kimberly Y. Whitfield
kpwhitfield@gmail.com
University of North Carolina Wilmington
Wilmington, NC 28403

Abstract

The use of Web-based technology has enabled many government and corporate training divisions to reach more learners than ever before. Institutions are restructuring their budgets, obtaining funding from governments and foundations to fund resources needed to increase online learning offerings. While online learning is increasing, questions arise as to the quality when compared to traditional face-to-face instruction. Research indicates that online learning can be more effective than face-to-face instruction. The purpose of this project is to analyze training sessions used by a state judicial system in southeastern United States for their Involuntary Commitment (IC) training to determine if self-directed online training is a viable solution to replace the current face-to-face training program and if so, design, develop and evaluate a pilot program for online training material.

Keywords: Web based instruction, analyze training, training, online learning, research paper

1. INTRODUCTION

The use of Web-based technology has enabled many government and corporate training divisions to reach more learners than ever before (Bonk, 2002; Lynch, 2005; Smith, 2003). According to the 2010 State of the Industry Report, the American Society for Training and Development (ASTD) stated that in 2009; twenty eight percent of all training hours for organizations were completed online, up twenty three percent from 2008 (Prost, 2010). Institutions are restructuring their budgets or obtaining funding from governments or foundations to fund resources needed to increase online learning offerings (Lynch, 2005). While online learning is increasing, questions arise as to the quality when compared to traditional face-to-face instruction.

The quality and benefits of face-to-face versus online instruction have been debated for years. The U. S. Department of Education sponsored a study which compared over one thousand

research studies from 1996 through 2008 to measure the quality of face-to-face versus online instruction (Means, 2008). In his study in 2000, Johnson compared online instruction with face-to-face instruction for a variety of learning outcomes. He concluded that course quality was considered slightly more favorable in face-to-face instruction than in online instruction (Johnson, 2000). Training in the workplace has also been shown to be more clearly defined, more collaborative and more innovative with face-to-face instruction (Smith, 2008). Face-to-face instruction also provides more opportunities for instructors to tailor the training session according to the needs of the students during instruction (Jefferson, 2009). Nonetheless, face-to-face instruction has its own challenges to learning.

Some studies suggest that if face-to-face training becomes instructor-centered it could encourage passive learning, ignore individual differences and needs of the learners (e.g., Banathy, 1994; Hannum & Briggs, 1982;

Johnson, 2000). Another limitation of face-to-face training is related to the degree of learner control. Learner control is where the learner believes their success is due to their own efforts (Lynch, 2004). Lynch (2004) contends that in face-to-face training sessions, learners may feel their success or failure is determined more by an external force and not by their own efforts. Flexibility of time and place are other obstacles for face-to-face learners. It is also argued that instructors often do not have enough time to adequately cover the material (Jefferson, 2009). Businesses usually allot only a small amount of time for training and expect learners to complete their learning while on the job. This can make mastering tasks difficult for learners who must perform immediately upon returning to work. Classrooms also have a limited number of seats and courses may not be offered when learners are available to attend. Face-to-face training can also be labor intensive and expensive (Bates, 2000). Organizations must pay the expense of travel for learners and instructors, equipment and instructional material costs. Thus, in spite of its many advantages, face-to-face instruction has limitations. Lack of learner control and inflexibility of time and place are some of the major limitations with face-to-face instruction. However, the question is can Online Learning eliminate some of these limitations and as a result, improve quality of instruction?

Before we can determine if online learning is the answer for training organizations, we must first define online learning. Bates (2000) uses the University of North Carolina Institute of Academic Technology to define online or distributed learning as an environment with a learner centered approach to education. According to this definition distributed learning integrates technology to enable opportunities for synchronous and asynchronous activities, which gives instructors flexibility to customize learning environments to meet the needs of diverse student populations while providing high-quality and cost effective learning (Bates, 2000). Online Learning activities used in distributed learning are also defined as a pedagogy that emphasizes asynchronous small group discussions, collaborative problem solving, reflective inquiry, and competency-based outcomes (Rudestam, 2004). Parsad (2008) states that distance education includes instructional delivery of online courses on or off-campus, remote locations, correspondence courses and hybrid/blended online courses. To summarize, online learning promotes a learner

centered approach for synchronous or asynchronous learning activities and provides more opportunities for utilizing customized learning environments that can be accessed anywhere or anytime. For the purposes of this project we will focus primarily on asynchronous, self-directed online learning environments rather than synchronous learning. Now that we have defined online learning, the question remains, is online learning the answer to provide quality instruction for training organizations?

Benjamin Bloom (1984) compared the results of one-on-one tutoring with face-to-face classroom instruction in his 2-Sigma problem. He found learners achieved up to two standard deviations higher in favor of one-on-one tutoring. Although we cannot provide an instructor for every student, educational technologies such as online training has the potential of individualizing learning and can make education both affordable and accessible (Fletcher, 2007). In another study, researchers completed meta-analysis on over one thousand empirical studies and determined that on average, online learners performed better than those receiving face-to-face instruction (Means, 2009). One reason for learner's high performance was due to flexibility of time and place. This flexibility gave learners access to additional learning time with the instructional materials. Learners also performed better when face-to-face and online instruction was blended together than with face-to-face instruction alone. Group participation in online learning enables the learning to be constructed through the interaction with others and the outcome is enhanced learner satisfaction (Bonk, 2002; Smith, 2008). The quality implications presented here are just a few of the many advantages to online learning; however there have been challenges associated with online learning as well.

Researchers point to a number of challenges regarding asynchronous online learning environments. Many of these challenges are associated with factors related to motivation and social presence or the degree to which people are *perceived* as "real" in computer-based communication (Gunawardena, 1995). For example, learners must be able to motivate themselves to learn on their own and teach themselves new information (Jefferson, 2009). There is also delayed feedback response time from both learners and instructors when asking questions or clarifying instructions. It is also difficult to form personal relationships both with

peers or instructors when courses are online only (Jefferson, 2009). Another study examining social presence in online courses found that students with high perceptions of social presence scored high in perceived learning and satisfaction just as students with low social presence scored lower in perceived learning and satisfaction (Richardson 2003). Even though motivation and social presence identified as challenges to online asynchronous learning, it is still considered a viable method of providing quality instruction for training organizations.

In summation, online training can be perceived as effective; if not more effective, than that of face-to-face training. Johnson completed a study in 2000 that compared student satisfaction with their learning experience in both a face-to-face and online learning environment. Johnson (2000) found that there was no difference in the quality of the learning but that students found a slightly more positive experience with online instruction (Johnson, 2000). Although face-to-face training may still be more advantageous in many cases, online learning has become the wave of the future. Learning in the workplace is initiated by individuals as part of their working lives. It is informal, self-directed and broken into small chunks of learning. It is driven by short term needs not by any conscious plan of study (Bates, 2000). Although there are startup and maintenance costs associated with developing online training, it can also be less expensive than face-to-face training. Once the expense of development, installing equipment and networks are completed, online training can be conducted by one instructor to many learners both near and far (Bates, 2000). Travel expenses are greatly reduced as are the expense of printing instructional materials which can be delivered electronically (Strother, 2002). Learners can complete online training any time and any place either from their workplace or from the privacy of their own homes (Parsad, 2008). Learners can also review the instructional materials many times to enhance their learning experience. In sum, online learning brings flexibility, of time and place, increased learner satisfaction and learner control and lower costs than with face-to-face instruction.

2. PROPOSE OF THE STUDY

The purpose of this project is to analyze training sessions used by a state judicial system in southeastern United States for their Involuntary

Commitment (IC) training to determine if self-directed online training is a viable solution to replace the current face-to-face training program and if so, design, develop and evaluate a pilot program for online training material.

The Context of the Study

The judicial system in southeastern United States is established as a co-equal branch of the state government. The local judicial agency within the state judicial system serves the technology, training and regulatory needs of the system. The local agency supports over six thousand five hundred employees in over 200 offices throughout the state. The agency has a Legal Division, Technology Division, Human Resources Division and Training Division. The technology division provides employees with hardware and software resources. The training division works closely with the technology division to design, develop, implement and evaluate training for software solutions to employees. The agency has face-to-face, hands on computer training facilities in the corporate office.

Traditionally, upon identification of the training needs, the agency would offer face-to-face classroom training. Face-to-face training sessions are also offered quarterly in the corporate training center. Previously, the IC application training has also been offered only for face-to-face, hands on classroom instruction. The face-to-face IC application training enabled users to utilize software application during the training to record specific data in a secure, centralized, electronic repository. efficient data sharing with the federal government as well as between different local offices.

The development of the face-to-face application training required the coordinated efforts between the Technology Division (TSD), Training Division and external agencies. To meet the training needs for implementation deadline of the new Web-based application, the agency has recently begun to incorporate online learning into their face-to-face training course offerings. The online training, however, has been limited to synchronous meetings (webinars) using tools such as Cisco WebEx. In order to continue offering online courses, the agency has also improved its technology resources and provides access to computers to enable the organization and its staff to utilize online training.

3. NEEDS ANALYSIS

Needs analysis was conducted to assess the effectiveness of the training for the application. Analysis of statistical reports generated by the agency and interviews with the project sponsor revealed approximately 20 percent of the offices are using the application. Analysis also revealed that those 20 percent enter 80 percent of the data into the application; the remaining 20 percent of the data is entered by users who do not use the application on a daily basis. Further investigation revealed that there have been only three four-hour face-to-face training sessions held at the training center from January 1, 2009 through December 31, 2010. Interviews with the management revealed that because of budget restraints and instructor availability, the number of training sessions was limited to only four sessions for a two year period. The sessions were also poorly attended because they were not flexible in time and place for learners. Learners were also informed that they would only be reimbursed for a portion of their travel expenses to attend the training. Analysis also revealed that only 15 learners attended the training sessions. A minimum of 200 users have access to the application and the ability to enter data on a daily basis. Only 7.5 percent of the users with access to the application have attended training sessions. Several application enhancement recommendations include making data entry into the application more efficient and incorporate user suggestions into the new design to promote "buy in" from the user group.

Assessment of the effectiveness of synchronous online delivery of the training for the new Web-based application revealed that it has some of the same limitations as the face-to-face training. Travel expenses were reduced when compared to face-to-face training, but online attendance remained low and only represented by the few offices already using the application. The number of training sessions has also been limited due to budget constraints, travel restrictions and availability of the two instructors who teach the application. The synchronous online training sessions have been available for one year. A total of thirty six synchronous training sessions were held from February to October. The training sessions were two hours long and only offered on 12 days from February to October. There were ten sessions in February, four in March, eleven in June, five in July and six in October. Interviews revealed that scheduling training sessions was difficult

due to limited instructor availability. Training sessions were held within those few days of availability. The results of learner evaluations revealed that the learners had little choice of days or times when to enroll in the training sessions and commented they would like training to be more flexible to their schedules.

A Summative evaluation was conducted for existing synchronous training sessions and found that learners' attitudes toward the training were mixed. Learners found the training organized and easy to follow, instruction was related to their work and instructional material was useful when returning to the job. Learners did not believe adequate time was allowed nor were there hands on activities included in the instruction. Interviews with the instructors revealed that they were only given two hours to complete each training session. Given the short amount of time involved, instructors did not have time to include hands on activities within their instruction. Instead, learners were given instructional materials which included examples and scenarios in the appendix. Learners also commented that once returning to work, they found they were unable to retain learned information and had to refer to the instructional materials. They also found the materials difficult to review on their own without the aid of the instructor. The instructional material was not designed to stand alone without learners attending training sessions.

Analysis has shown that face-to-face and synchronous online training sessions has not solved the problems of flexibility of time and place, increased learner satisfaction and learner control. Synchronous online training has reduced travel expenses for learners but still include travel expenses for instructors and equipment expenses. As a result of the needs analysis, it is recommended that self-directed, online training would address the needs of the learners, support learner control and have flexibility of time and place. The development of self-directed learning materials will not be without cost. However, the reduction in instructor and equipment expenses will compensate for some of the development cost. Furthermore, Self-directed asynchronous online training sessions would enable learners to have the flexibility to review and revisit the instruction as many times as needed to refresh their memories. Training would be designed to address the needs of the learners without the need for an instructor to be present. Learners

will be able to ask questions and receive feedback from instructors through asynchronous means. Learners will be required to register for the self-directed online training. Registration is required to ensure learners can access the host website and to establish communication between the instructor and learners. Once registered, learners be sent a welcome email which will identify the instructor's contact information, how to access the self-directed training and who to contact for technical support. Learners will have unlimited access to the self-directed material and a 24 hour helpdesk support. Learners will also be able to email instructors with questions about the training. By using asynchronous means of communication, instructors have the flexibility to answer questions and provide feedback from any location and whenever they have time.

4. RECOMMEND SOLUTION

Based upon the research, data analysis and interviews, the recommended solution is to design, develop and evaluate a pilot program for online, self-directed training materials for the IC application. All technology resources have been established for learners and online training is a viable option to use for IC application training. The design of the online training material will follow the conclusions found in the literature research. The instructional material will be self-directed and broken into chunks of learning, have flexibility of time and place and can be reviewed multiple times to reinforce learning. Travel expenses will be greatly reduced as will the expense of printing training materials. The training will be produced through using advanced multimedia technology tools and delivered through the agency *Intranet*. The training will address the needs of the learners, provide environment for practice, serve as refresher training without extra cost and effort and offer learner flexibility and control.

In order to have flexibility of time and place, address the needs of the learners and support learner control, the self-directed, self-paced online training was developed with the following goals in mind.

- The self-directed, self-paced training will be available to learners any time and from any place in order to achieve the learning objectives of the training session.
- The learners will be able to retake (repeat) the course as needed.

- Learners will be able to transfer the knowledge and skills to their work environment upon completion of the self-directed training.

5. LEARNING OUTCOMES

Several learning outcomes were identified for the self-directed online training. First, Learners will be able to apply a set of rules to determine what is entered into the software application. Second, ensure the identified data is entered properly and without any error and lastly, self-assess the accuracy of the data that are entered into the system. Since only cases that contain a specific set of circumstances should be entered into the application, the learner is expected to identify which set of circumstances required data entry and which did not.

The objectives were defined using a task analysis to identify high, medium and low level tasks. Once all the tasks were identified, the instructional goal, learning outcomes and learning objectives were developed and refined. The assessment strategies were based on the instructional goal and learning outcomes. The assessment items represent measurable concepts of the instructional goal and objectives. Once measurable concepts were identified, assessment items and instructional strategies were developed.

6. INSTRUCTION DESIGN MODEL

The instructional method used for designing the self-directed online instructional materials is the Learning by Doing or Goal-Based Scenario model developed by Roger C. Schank (Riegeluth, 1999). Shank's model is based on skill development and learning factual information within the context of how it will be used. Shank based his model on several core values which include:

- Learning to do skills, not just know factual information.
- Learning occurs in the context of goals that are relevant, meaningful and interesting to the learner.
- Knowledge learned is in terms of relevant tasks and how learners will use it outside the learning environment.

The instructional material was designed to follow learning by doing or the goal-based scenario (GBS) training method. Using this model instruction was designed to incorporate Learning by Doing simulation where learners pursue goals

by practicing target skills and using relevant content to help them achieve their goals.

Environmental Analysis

Environmental Analysis showed that network infrastructure and computer hardware installation was completed and was available to all users throughout the state. The agency had set up a public website which could be accessed anywhere and contained published information for both employees and the public. A private computer network or *Intranet* has also been established with employee only access to all secured agency information and documentation. The self-directed training material was created and delivered individually for the initial pilot training. The Instructor and learners accessed training materials from their own computers. See Appendix B for a sample welcome letter that will be emailed to learners.

Learner Analysis

Learner analysis was also conducted to identify characteristics of the target audience. The analysis showed that the state agency had over six thousand users with access to various software applications within the agency. These users are current agency employees, both men and women, of many races and ethnicities with ages ranging from 18 to 73 years old. Learner education levels range from a minimum High School Diploma or GED through PHD. Learner abilities range from moderate to advanced level. The entry behaviors survey indicates learners have basic to advanced computer skills and moderate to advanced English reading and comprehension skills. Learners also had prerequisite knowledge needed to enter data into agency applications and discriminate case information. Learners may not have necessary prerequisite knowledge of the instructional delivery system and will be directed to view tutorials already available to them before taking the online learning materials. Learners believed the use of self-directed training could enable them learn at their own pace while still being able to perform job responsibilities in a timely fashion. Learners appeared to be highly motivated and wanted to acquire skills to protect their jobs while having satisfaction in performing well on the job. See [Appendix A, Table 1](#) for more information about the target learners.

7. FORMATIVE EVALUATION PROCESS

Methodology

The formative evaluation was conducted using the Dick and Carey Criteria (Dick 2005). As suggested by Dick, Carey and Carey (2009), one-on-one and small group formative evaluation was conducted to assess the effectiveness of the module and to identify the areas for improvement and change. The ARCS Motivation Model and modules' learning outcomes were used as a framework to conduct both one-to-one and small group trials evaluation process. The Dick and Carey formative evaluation Criteria suggest assessing the clarity of instruction, the impact on learning and feasibility of time and resources. The clarity of instruction is how clear the message (content of the instruction), images, links and procedures are to the learner. The impact on learning deals with the learners attitudes toward the instruction and their achievement of the objectives. The feasibility considerations are the capability of the learner and the appropriateness of resources or environment. The ARCS Motivation Model suggests evaluating the appropriateness of instructional strategies to gain learners attention, provide relevant information, ensure learner confidence to succeed and satisfaction with the learning experience. Thus, the outcomes for one-to-one trials are to ensure the instruction contains appropriate vocabulary, complexity and examples for the learner, yields positive learner attitudes and achievement and is feasible and useable within the given resources and environment. The outcomes for the small group trial are to refine the instruction to maximize effectiveness for the target audience.

Instruments

The formative evaluation instruments used to collect data include a survey, informal observation, a pretest and a posttest. The pretest and post included five questions based upon the course objective of entering, assessing and correcting data within the software application. The questions addressed the learning objectives which were determining what data to enter, demonstrating data entry procedures, assessing accuracy of data entered and correcting errors. The posttest question items were parallel to the pretest question items in order to measure learners' achievement of learning objectives. The survey was divided into four sections. The first section included questions about the clarity of instruction, the

impact on the learner and feasibility. The second section included navigation, feedback and organization questions. The third section included questions about the overall features of the module, the quality of instruction, relevance, gaining and maintaining learners' attention, and satisfaction with the learning experience. The last section included open ended questions about what learners liked and disliked and suggestions for improvement. See [Appendix C](#) for the survey, pretest and posttest instruments.

Participants

The self directed instructional module was created because the target audience is located in various cities across the state. Due to time constraints to complete the formative evaluation, only six participants were available at the time of the evaluations. Three individuals were available in person and three live in remote parts of the state. The participants of the One-to-One evaluation and small group of the Involuntary Commitment Training Module were six adult learners. Three of the evaluations were conducted one-on-one and since the module was self directed three of the evaluations were conducted remotely. The six participants consisted of two individuals with no experience in the Involuntary Commitment subject matter, one individual with some experience and three individuals with more than five years experience. Three learners have advanced level computer skills with experience in various types of software applications and three learners have moderate level skills also experienced in various types of software applications. Learners ages ranges from 30 to 60 years old. All learners were contacted before they began the instruction to explain the procedure, how to access the components of the instruction and answer any questions.

Procedure

The one-to-one evaluations were conducted in person for all three evaluations. This was to ensure consistency in functionality learners. Learners were under observation as they completed the pretest, instructional module and posttest. The author answered questions and recorded their comments and suggestions. Learners were allowed to complete the survey on their own to increase their confidence and comfort level when rating the instructional materials. The remote evaluations were initiated through Skype with video access to the learners and the ability to share desktops was used for observation. For the remote evaluations, the

instructional module was loaded onto a web server and learners were given detailed instructions and links to the module, pretest, posttest and survey. Due to technical difficulties with software, the remote learners were unable to access the quiz questions imbedded within the instructional module. As an alternative solution, the quiz questions were emailed as an attached word document the learners completed while viewing the module. The learners then emailed the quiz with answers back to me after completing the instruction. The problem was fixed later, after the evaluations were complete. A thank you email was sent to the learners for their evaluations and included the new website link so learners could view the final product with quizzes in its entirety.

8. EVALUATION RESULTS

Overall learners achieved learning outcomes and commented that they did learn information they did not know before completing the instruction. All of the learners scored well on the instructional module quiz. Three learners answered all the questions correctly, two learners missed one question and one learner missed two questions. The incorrect answers were not concentrated within a single learning objective. The results of the pretest and posttest were also good. The results of the pretest were, four learners scored four out of five questions correct and two learners scored five out of five questions correct. A score of five out of five correct means that the learner would not necessarily have to complete the instructional module; however, this formative evaluation was conducted by three learners who are very familiar with the subject although they are not subject matter experts. On the posttest, two learners scored four out of five and four learners scored five out of five questions correct. Learners stated that incorrect answers were possibly due to the question instructions not being clear and the difficulty in using the quiz feature to answer questions correctly. See [Appendix C, Table 2 and 3](#) for the quiz and pretest, posttest learning gain score results.

The survey indicated that overall, the learners had positive perception about quality of the instruction. The learning material gained and maintained their attention and they were satisfied with the learning experience. Learners thought the material was relevant to their needs. Learners also agreed the purpose and goals were clearly stated, it was appropriate for

individuals with various levels of computer experience and it was organized and easy to navigate. All learners but one agreed the length of the module was appropriate. One learner thought the overall length of the module was long but stated they were glad it was broken up into short sections five minutes or less so they did not have to complete the module in one session. The primary negative issue was lack of quiz feedback within the module. The quiz components of the module were designed using a specific software quiz functions which limited the design capability. The module quiz design did provide feedback when working properly; however, due to technical difficulties the remote learners did not have the ability to view the quiz questions within the module after it was posted. The learners were given verbal feedback during the evaluations but stated that they would like to see the quiz function working within the module itself. See [Appendix D, Table 4](#) for the survey results.

9. CONCLUSION

In conclusion, research revealed that while face-to-face training may still be more advantageous in many cases, online learning can be as effective if not more effective. Online learning has become the wave of the future. It brings flexibility, of time and place, increased learner satisfaction and learner control and once developmental costs are incurred, lower costs than with face-to-face instruction. The instructional module developed was self directed based on face-to-face instructional material. Instructional designers should realize they may spend just as much, if not more time designing the module than for a face to face instruction. The content had to be developed in its' entirety, knowing that an instructor would not be present while learners are completing the module. This created a different set of challenges than when designing face-to-face instruction. Further evaluation with a larger sample group is needed to determine more accurate learning outcomes.

10. ACKNOWLEDGEMENT

I would like to thank my UNCW project committee Ms. S. Beth Allred Oyarzun, Dr. Ray Pastore and especially Dr. Mahnaz Moallem for their support, reviews, evaluations and suggestions during the process of completing my capstone project. Also Dr. Thomas Janicki, Li-Jen Shannon, the ISECON committee and reviewers for their evaluations. I would also like

to thank my husband Patrick Whitfield for his unending support and encouragement in all my endeavors.

11. REFERENCES

- Banathy, B. (1994). Designing educational systems: Creating our future in a changing world. In C. M. Reigeluth & R. J. Garfinkle (Ed.). *Systematic change in education*. (pp. 27-34). Englewood Cliffs, NJ: Educational Technology Publications.
- Bates, A. W. (2000) *Managing for Technological Change: Strategies for Colleges and University Leaders*. San Francisco: Jossey-Bass Publishers.
- Bloom, B. S. (1984) The 2-Sigma problem: The search for methods of group instruction as effective as one-to-one tutoring. *Educational Researcher*, 13(6), 4-16
- Bloom, B. S. (1984) The 2-Sigma problem: The search for methods of group instruction as effective as one-to-one tutoring. *Educational Researcher*, 13(6), 4-16.
- Bloom, B. S. (1984) The 2-Sigma problem: The search for methods of group instruction as effective as one-to-one tutoring. *Educational Researcher*, 13(6), 4-16
- Bonk, C. J. (2002) *Online Training in and Online World*. Bloomington, IN: CourseShare.com.
- Dick, W., Carey, L., Carey, J. (2005). *The Systematic Design of Instruction*, (pp 284-359) Boston, MA: Pearson Education Inc.
- Doherty, P. B. (1998). Learner control in asynchronous learning environments. *Asynchronous Learning Networks Magazine*, 2(2), 1-11.
- Fletcher, J. D., Tobias, S., Wisher, R. A. (2007) *Learning Anytime Anywhere: Advanced Distributed Learning and the Changing Face of Education*. *Educational Researcher*, Vol. 36 No. 2.
- Gunawardena, C. N. (1995). Social presence theory and implications for interaction and collaborative learning in computer conferences. *International Journal of Educational Telecommunications*, 1(2/3), 147-166.

- Hannum, W., & Briggs, L. (1982). How does instructional system design differ from traditional instruction? *Educational Technology*, 22(1), 9-14.
- Reigeluth, Charles, M., (1999) Instructional-Design Theories and Models: A New Paradigm of Instructional Theory, Volume II (pp. 91-114 and 161-182). Mahwah, NJ: Erlbaum.
- Richardson, Jennifer, C. (2003) Examining Social Presence in Online Courses in Relation to Students' Perceived Learning and Satisfaction. *JALN* Vol. 7. Issue 1.
- Richey, R. & Klein, J. (2009) Design and Development Research. NY, NY: Routledge
- Rudestam, Kjell, Erik (2004) Distributed Education and the Role of Online Learning in Training Professional Psychologists. *Professional Psychology: Research and Practice* Vol. 35, Issue 4, (pp. 427-432).
- Simpson, C., Du, Y. (2004) Effects of Learning Styles and Class Participation on Students' Enjoyment Level in Distributed Learning Environments. *Journal of Education for Library and Information Science*, Vol. 45, No. 2.
- Smith, Peter, J. (2003) Workplace Learning and Flexible Delivery. *Review of Educational Research*, Vol. 73, No. 1.
- Strother, Judith B. (2002) An Assessment of the Effectiveness of e-learning in Corporate Training Programs. *The International Review of Research in Open and Distance Learning*, Vol 3, No 1 from <http://www.irrodl.org/index.php/irrodl/article/viewArticle/83/160>

Editor's Note:

This paper was selected for inclusion in the journal as the ISECON 2012 Best Master Student Paper

Appendix A – Learner Analysis

Table 1: Learner Analysis Matrix

Information Categories	Data Sources	Learner Characteristics
Entry Behaviors	Interviews, Data analysis, Observation	Learners have basic to advanced computer skills and moderate to advanced English reading and comprehension skills.
Prior Knowledge	Data analysis, Interviews	Learners have prerequisite knowledge needed to enter data into agency applications and discriminate case information. Learners may not have prerequisite knowledge of the instructional delivery system and will be directed to view tutorials available to them before they begin the training.
Attitudes	Interviews, Observation	Learners believe the use of self-directed training will enable them learn at their own pace while still being able to perform job responsibilities in a timely fashion.
Motivation for Instruction (ARCS)	Interviews, Observation	Learners are highly motivated. They want to acquire skills to protect their jobs and have satisfaction in performing well on the job.
Education and ability levels	Data analysis	Learners have a minimum High School Diploma or equivalent through PHD level of education. Learners have moderate to advanced learning abilities.
Relevance of skills to workplace	Interviews, Data analysis, Observation	Learners view the skills learned in the training are directly related to their work environment and therefore relevant and valuable.

Appendix B – Welcome Letter

The Welcome letter will be sent to learners via Email once they have registered for the module.

Dear [Learner],

Welcome to the Involuntary Commitment Application Training Module. I am [Instructor's Name] and will be the instructor for this course. My contact information is below.

This instructional module contains information about how to use the application from the Intranet to enter data into the system. The module can be found on the company website, click on the link provided below to access the instructional module.

The Instructional module includes both Audio and Video components and can be viewed on any computer that has access to the Website. The module is designed to take thirty minutes to complete and is divided into seven sections the Introduction, Classify Cases, The Main Menu, How to use Case Add, How to use Search, Verifying Reports and How to use Case Edit. Each section is approximately five minutes long. The recommended instructional flow is to begin at the Introduction and continue sequentially throughout the sections.

There are no prerequisites to the course however each learner should have a userid and password to gain access to the Intranet application. Contact your supervisor to receive necessary forms and instructions.

Please take a moment to complete the Pretest found in the link below before completing the instructional module. After completing the instruction, complete the Evaluation Survey and Posttest found in the links below. These evaluations enable me to determine if the instruction is effective and identifies areas that may need revised.

Thank you for taking time from your busy schedule to complete this instructional module. If you have any comments or questions please contact me via email any time. I hope you find the instruction informative, helpful and enjoyable.

Sincerely,

[Instructor Name]
Instructor
Email:
Phone:

Click on the link below to access the instructional module or type the address into the web browser

Click the link below to access the Module Evaluation Survey

Click on the link below to access the pretest

Click on the link below to access the posttest

Appendix C – Formative Evaluation

Survey Instrument

The link to the formative evaluation survey is:

1. Involuntary Commitment Module Survey					
After completing the Instructional Module, please answer the following questions.					
1. Consider the following statements about the content of the instructional module and rate them on a scale of 1-5 where 1 indicates that you strongly disagree and 5 indicates that you strongly agree.					
	5 Strongly Agree	4 Agree	3 Unsure	2 Disagree	1 Strongly Disagree
The purpose and/or goals of the module are clearly stated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The module is appropriate for individuals with various computer experience levels.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information was presented in a manner that made it easy to understand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The information presented was appropriate in length.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) <input type="text"/>					
2. Consider the following statements about the navigation and function of the module and rate them on a scale of 1-5 where 1 indicates that you strongly disagree and 5 indicates that you strongly agree.					
	5 Strongly Agree	4 Agree	3 Unsure	2 Disagree	1 Strongly Disagree
The module was organized and easy to follow.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Table of Contents and software navigation were available easy to operate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The software provides feedback to user responses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) <input type="text"/>					
3. Consider the following statements about the overall features of the module and rate them on a scale of 1-5 where 1 indicates that you strongly disagree and 5 indicates that you strongly agree.					
	5 Strongly Agree	4 Agree	3 Unsure	2 Disagree	1 Strongly Disagree
The overall quality of the instruction is good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The material was relevant to my needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The module gained and maintained my attention.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am satisfied with the learning experience.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) <input type="text"/>					

4. What did you like best about the Involuntary Commitment instructional module?

5. What did you like least about the Involuntary Commitment instructional module?

6. Please, suggest ways the Involuntary Commitment instructional module can be improved.

Pretest

The link to the Pretest is:

Pretest - Involuntary Commitment Training Module

Question 1

What type of data should be entered into the application?

- A. Involuntary Commitment
- B. Voluntary Commitment
- C. Inpatient Commitment
- D. Substance Abuse Commitment

Question 2

Check the box next to the components of the Main Menu.

- ☐ Add Involuntary Commitment
- ☐ Edit Involuntary Commitment
- ☐ Search Involuntary Commitment
- ☐ View Reports
- ☐ Help

Question 3

Which of the data entry fields below are required to enter case information into the “Case Add” feature of the application?

- A. Name
- B. Address
- C. Social Security Number
- D. Judges’ Name

Question 4

What two data entry fields are used to search for information in the application?

- A. Name and address
- B. Social Security Number and Name
- C. File number and County
- D. None of the above

Question 5

What two items are analyzed to determine if there are any errors in data entry?

- A. The Case File and the Case Add screen
- B. The Judgment form and Data Entry Report
- C. The View Search screen and Case File
- D. None of the Above

Posttest

The link to the Posttest is:

Posttest - Involuntary Commitment Training Module**Question 1**

What type of data should NOT be entered into the application?

- A. Involuntary Commitment
- B. Voluntary Commitment
- C. Inpatient Commitment
- D. Substance Abuse Commitment

Question 2

List the five components of the Main Menu in the Text Box below.

Question 3

Which of the data entry fields below are required to enter case information into the “Case Add” feature of the application?

- A. File number
- B. Address
- C. Identification Number
- D. All of the Above

Question 4

What feature is used to find case information that has been previously entered into the application?

- A. Add Involuntary Commitment
- B. Edit Involuntary Commitment
- C. Search Involuntary Commitment
- D. View Reports

Question 5

How are errors in data entry identified?

- A. By comparing the Case Add Screen to the Case File
- B. By comparing the Data Entry Screen to the View Report Screen
- C. By comparing the Data Entry Report to the Judgment Form
- D. By Comparing the Case File to the Case Report

Appendix D – Evaluation Responses

Table 2: Results of Quiz

Learner	Objective 1 Classify Cases		Objective 2 Case Add				Objective 2 Search	Objective 3 View Reports				Objective 4 Case Edit	Mastering Objectives	
	Q1	Q2	Q1	Q2	Q3	Q4	Q1	Q1	Q2	Q3	Q4	Q1	#	%
Learner 1	+	+	+	-	+	+	+	+	+	+	+	+	11	92
Learner 2	+	-	+	+	+	+	+	+	+	+	+	+	11	92
Learner 3	+	+	+	+	+	+	+	+	+	+	+	+	12	100
Learner 4	+	+	+	+	+	+	+	+	-	+	-	+	10	84
Learner 5	+	+	+	+	+	+	+	+	+	+	+	+	12	100
Learner 6	+	+	+	+	+	+	+	+	+	+	+	+	12	100
+ correct response														
- incorrect response														

Table 3: Learning Gain Score – Pretest and Posttest

	Learner 1	Learner 2	Learner 3	Learner 4	Learner 5	Learner 6
Pretest	4	5	4	4	4	4
Posttest	4	4	5	5	5	5
Learning Gain Score*	0%	-1%	1%	1%	1%	1%

Table 4: Results of Survey

Consider the following statements about the overall features of the module and rate them on a scale of 1-5 where 1 indicates that you strongly disagree and 5 indicate that you strongly agree. 1=Strongly disagree; 2=Disagree; 3=Unsure; 4=Agree; 5=Strongly agree						
Question	Learner 1	Learner 2	Learner 3	Learner 4	Learner 5	Learner 6
Consider the following statements about the content of the instructional module and rate them on a scale of 1-5 where 1 indicates that you strongly disagree and 5 indicate that you strongly agree.						
The purpose and/or goals of the module are clearly stated.	5	5	5	5	5	5
The module is appropriate for individuals with various computer experience levels.	5	5	5	5	5	4
The information was presented in a manner that made it easy to understand.	5	5	5	5	5	4
The information presented was appropriate in length.	5	4	5	5	3	4
Other (please specify)						
Consider the following statements about the navigation and function of the module and rate them on a scale of 1-5 where 1 indicates that you strongly disagree and 5 indicate that you strongly agree.						
The module was organized and easy to follow.	5	5	5	5	5	4
The Table of Contents and software navigation were available easy to operate.	5	5	5	5	5	4

The software provides feedback to user responses.	5	5	5	3	4	3
Other (please specify)				Quiz not working	No quiz	No quiz pop ups
Consider the following statements about the overall features of the module and rate them on a scale of 1-5 where 1 indicates that you strongly disagree and 5 indicate that you strongly agree.						
The overall quality of the instruction is good.	5	5	5	4	4	4
The material was relevant to my needs.	5	4	5	3	4	5
The module gained and maintained my attention.	5	4	5	5	4	4
I am satisfied with the learning experience.	5	4	5	5	4	4
Other (please specify)						
What did you like best about the Involuntary Commitment instructional module?	Easy to follow and understand the instructor	It was easy to use and understand and I could do it at a time convenient for me	there is not just one thing: (1) verbal and visual synchronization, (2) the ability to pause the video/presentation, (3) real life examples	Very complicated topic was well presented and easy to follow.	The module provided information that I didn't know about necessary data needed for court documents.	Use of forms in instruction, cursor navigating to correct parts of form
What did you like least about the Involuntary Commitment instructional module?	No response	No response	I am not sure there was anything	Did not get to see if my answers to the questions were correct or not.	That I had to go back into the module a couple of times to answer the questions, and then, I wasn't able to answer them all. Also, I didn't realize for quite awhile that by moving the mouse off of the module surface, the module surface was able to become enlarged.	Some of the quiz answers were space specific. Example, one answer required a space after a comma, even though the content of the answer was correct.
Please, suggest ways the Involuntary Commitment instructional module can be improved.	No response	No response	The rate of speech could be slower	This is a very informative module; I did learn	Clearer instructions as to what information to look for	No response

				the objectives without having any prior knowledge of the topic. The module did breakdown a very complicated topic making it easy to complete.	to answer questions and to consider for giving feedback.	