



TECS-TRAIN – A Faculty Mentoring Program for Enhancing Quality, Interaction, and Communication in Online and Blended Learning Courses

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Abstract

“TECS-TRAIN” is a faculty peer Mentoring program that was developed in the College of Technology and Computer Science (TECS) at East Carolina University (ECU). The purpose of the program is to advance standards of excellence and improve the quality of learning outcomes in both on campus and distance education courses. The foundation of the program is an online course that is continuously updated with anecdotes from faculty Mentees and introduction of new technology tools to enhance learning activities. TECS-TRAIN is a self-paced online training program for enhancing interaction, communication, and learning outcomes. The goal is to help new faculty teaching both online and blended courses offered by TECS.

1. Introduction

“TECS-TRAIN” is a faculty peer Mentoring program that was developed for the purpose of advancing standards of excellence and improving learning outcomes in courses offered in the TECS at ECU. The course was tested in a faculty pilot with twelve faculty members during the summer of 2011, revised in the fall semester of 2011, and then distributed for analysis by an Expert Review Panel in the spring of 2012. The twelve members in the pilot were provided with a small stipend for their participation in on-site training, online curriculum development, and leadership. Each of the twelve Mentors and Mentees were certified through completion of the TECS-TRAIN course, Digital Portfolio, and pilot project training. Each member of the Mentoring Cadre found the program helpful and was anxious to work as a Mentor with new faculty. Based on recommendations that were made by an External Expert Review Panel, minor refinements were made, and the program was presented to the Administration of the College for recommended action. It was decided because of a statewide moratorium on new faculty hires that implementation of the Program would be tentatively postponed until the moratorium was lifted. It is anticipated that the Program will be required for all new faculty members in four departments in the College.

One of the major reasons for developing TECS-TRAIN was an increasing emphasis on program standards and the need for the University to be well prepared for Southern Association of Colleges and Schools (SACS)¹ reaffirmation of accreditation. This program was designed to help faculty correlate learning outcomes with university-wide and other discipline-specific standards.

A major goal of the course and program is to improve collaboration, interaction, and communication in our courses.

TECS-TRAIN is part of a Certification and Mentoring Program for new faculty teaching blended and distance learning courses in TECS. However, it was envisioned by the development team that once the program is introduced to new faculty, that other faculty in the College would eventually be encouraged to complete this renewal program. The TECS-TRAIN course has two parts. The first part consists of discipline-specific content provided through four learning modules (Syllabus and Standards, BlackBoard Course Management Shell, Synchronous Tools, and Asynchronous Tools) and supporting Materials (Anecdotes, Toolbox Tutorials, and Keynote Presentations). Figure 1 shows the TECS-TRAIN course site on Panel². The second part of the course involves the introduction of a Mentoring program to aid the faculty Mentee in developing their Digital Portfolio. The portfolio provides evidence of learning and is presented by the Mentee to a Review Team consisting of their Mentor, Departmental Chairperson, and facilitator of the TECS-TRAIN program. Mentees successfully completing TECS-TRAIN are inducted as members into the Mentoring Cadre by the College and are certified as TECS-TRAIN Mentors.

The screenshot shows a Blackboard LMS interface for the TECS-TRAIN course. At the top, there's a breadcrumb trail: 'TECS_TRAIN_Curriculum_Dev_Course_Backup TECS TRAIN Curriculum Development Course Backup Announcements'. Below this is a navigation menu on the left with items like 'TECS-TRAIN Curriculum Dev Course Backup (TECS TRAIN Curriculum Development Course Backup)', 'Announcements', 'Project Proposal', 'Background', 'TECS-TRAIN Flow Chart', 'TECS-TRAIN Modules' (with sub-items: 1. Syllabus and Standards, 2. Bb Course Mgmt Shell, 3. Synchronous Tools, 4. Asynchronous Tools), 'Supporting Materials' (with sub-items: Anecdotes, Toolbox Tutorials, Keynote Presentations), and 'TECS-TRAIN Portfolio' (with sub-item: Portfolio). The main content area features a large purple banner with the text 'SELF-PACED TRAINING FOR ENHANCING INTERACTION' and 'TECS-TRAIN COURSE'. Below the banner is an 'Announcements' section with a post titled 'WELCOME FROM THE TECS-TRAIN MENTORING CADRE' dated 'Posted on: Sunday, July 8, 2012'. The post text reads: 'WHAT IS TECS-TRAIN? It's part of a Certification and Mentoring Program for faculty teaching blended and distance learning courses in the College of Technology and Computer Science. The major goal of TECS-TRAIN is to advance standards of excellence and improve the quality of learning outcomes in our courses. The program was facilitated through support from the Division of Academic Affairs and the College of Technology and Computer Science. It is a "living course" created by faculty for faculty. It is our hope that you will help improve this content with your fresh ideas, tools, and success stories in the anecdotal sections associated with the learning modules. The project began in the summer of 2011 with 8 TECS-TRAIN Mentors from each of the departments in the college. These individuals created the foundation for the Mentoring Cadre. We encourage you to join us in this adventure --'. A right-hand sidebar shows the post was made by 'John DuVall'.

Figure 1. TECS-TRAIN Course

TECS-TRAIN involves a series of sequential activities that a new faculty (Mentee), along with the support from a trained faculty (Mentor), goes through to complete this training. The sequential steps that are followed in order for the Mentee to complete the training and prepare their Digital Portfolio are outlined in Figure 2.

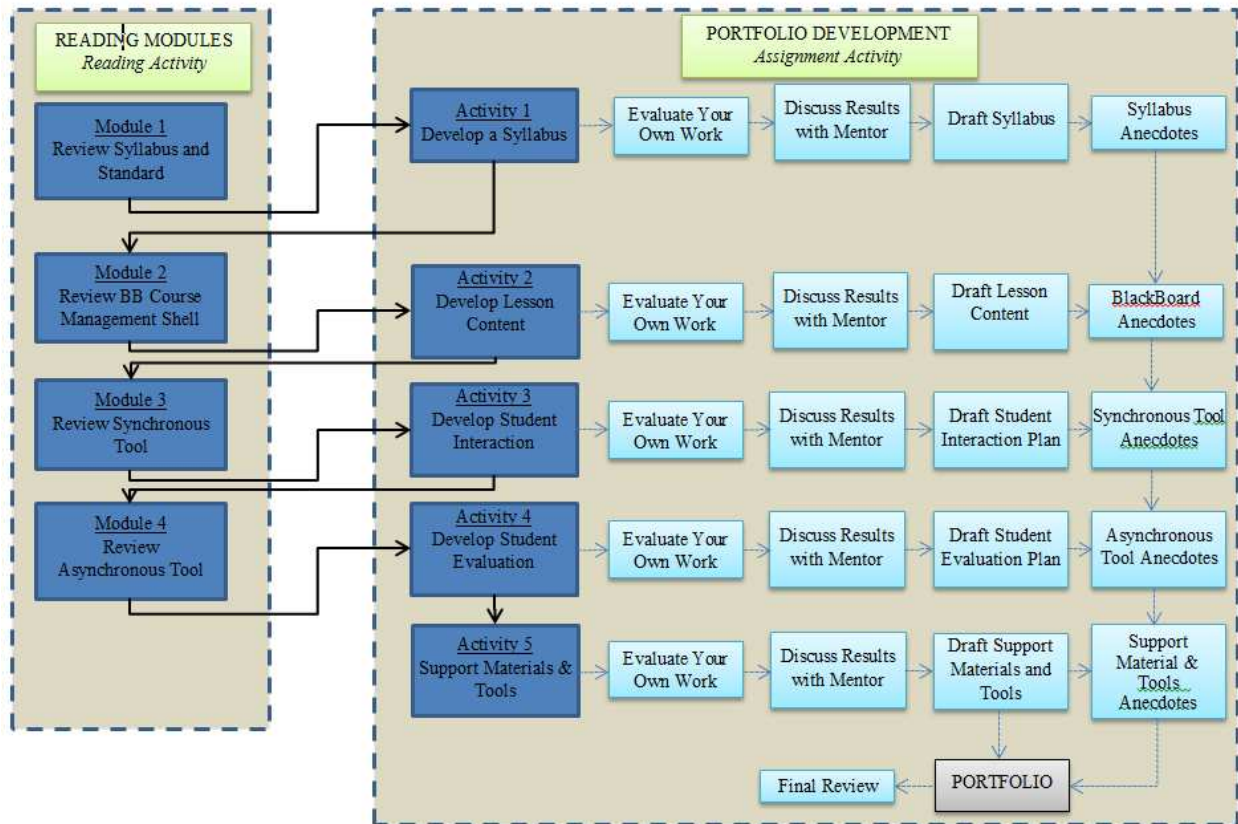


Figure 2. TECS-TRAIN Flowchart

Mentees are expected to carefully study the TECS-TRAIN modules and apply this information in their own creative way in their portfolio. Learning activities are included with each module. It is through successful completion of these activities that the Mentee demonstrates learning and mastery of the content in the module. These activities are then included in the Mentee's Digital Portfolio. For the development and testing phases addressed in this pilot project, five faculty Mentees were selected as participants and assigned to a mentor who was from the original project members in 2011. With the use of this Mentor/Mentee partnership approach, Mentors helped Mentees identify best practices from the contents of TECS-TRAIN and therefore developed their Digital Portfolio providing evidence of learning for final review and evaluation. During this stage in the evolution of TECS-TRAIN, exhibits in the Digital Portfolio are made available under the "Groups" tab in Panel. This approach is used to keep the content confidential between Mentor and Mentee, prior to publication in the Digital Portfolio.

The purpose of this manuscript is to share much of the background information and rationale for creating the TECS-TRAIN course, major components of the course, results from the External Expert Review Panel, first implementation of the course in a summer pilot, and our experiences during development and testing. This manuscript is organized as follows: Section 2 presents the

background of TECS-TRAIN. Section 3 discusses the four learning modules. Section 4 discusses the Digital Portfolio, and Section 5 provides conclusions and recommendations.

2. Background

TECS-TRAIN was designed by faculty to be a “living course” that allows and encourages continuous improvement based on real life faculty experiences, and new instructional tools and techniques. The goals of this project are:

- Establish the TECS-TRAIN Mentoring Cadre, who will expand the content from SACS and the Online Quality Council (OQC) Distance Education (DE) Modules, standards from the OQC, tutorials from the Technology Systems Innovation Cadre, and expert presentations to one of their model courses.
- Develop a self-paced online training program with benchmarks for enhancing interaction, communication, and learning outcomes in online and blended courses.
- Establish a College-wide Mentoring program utilizing members from the TECS-TRAIN Mentoring Cadre to promote use of the online training program in their own department and areas of specialization.
- Develop an assessment plan for determining the impact of the online training program on the improvement of instruction in the College of Technology and Computer Science.
- Create the TECS-TRAIN External Review Panel to review the course and make recommendations for improvement prior to implementation College-wide.
- Develop a plan of action for providing TECS-TRAIN spinoff information sessions for interested Deans and Chairpersons in other Colleges throughout the University.

The foundation for the course was created in the summer of 2010 by eight faculty members from four departments in the College (Computer Science, Construction Management, Engineering, and Technology Systems). Since this time the course was refined by the “Technology Systems Innovation Cadre (Fall 2011), reviewed by the External Expert Review Panel (Spring 2012), and presented to the Technology Council in the College and the Dean’s Cabinet of Associate Deans and Chairpersons (Fall 2012). The first implementation stage with Mentors and new faculty Mentees was planned to occur in the Spring of 2013. However, this was postponed until the moratorium on new faculty hires is lifted statewide and we can add new faculty in the College.

When full implementation takes place the course will continue to be refreshed each semester through the completion of performance-based activities by Mentees in their Digital Portfolios and the anecdotal vignettes they add to the course from applying learning outcomes in their courses. We believe that one of the most important features of TECS-TRAIN is its regenerative nature, made possible through the active involvement of faculty Mentor/Mentor teams

completing learning portfolios and adding content based on new/emerging technologies, as well as anecdotes based on their experiences and practice.

During the development phase, the External Expert Review Panel evaluated the course content and structure. In the spring of 2012 feedback was provided that was used for refinement. A survey with seven statements was used to obtain responses related to the four learning modules and supplemental materials in the course. Responses were provided on a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). Table 1 contains the mean values for each of reviewer's responses.

Table 1. Review Panel Overall Course Data, Mean Results

	Syllabus and Standards	BB Course Management	Synchronous Tools	Asynchronous Tools	Supplemental Materials
Informative	5	5	4.75	4.5	4.5
Increased Understanding	5	5	4.5	4.25	4.25
Well Organized	4.25	4.75	4.5	4.5	4.25
Enhanced Learning	3.5	4.75	4	4	4
Professional Quality	4.25	4.25	4.25	4	4
Practical Application	4.5	4.25	4.5	4	3.75
Recommend	5	4.75	4.5	4.25	4

The reviewers were also asked to respond to the following questions pertaining to the portfolio and the overall TECS-TRAIN course. Data is shown in Table 2:

Table 2. Review Panel Course Components, Mean Results

Question	Mean Response
The course material adequately prepares the learner to complete the Portfolio.	4.25
Completing the Portfolio encourages the learner to actively engage the course material.	4.5
Completing the Portfolio encourages the learner and mentor to engage with one another.	4.5
Completing the Portfolio adequately measures the learning outcome of the course.	4
Completing the Portfolio demonstrates the practical skill necessary to teach online	4.25
Completing the TECS-TRAIN course is likely to improve interaction.	4.75
Completing the TECS-TRAIN course is likely to enhance communication.	4.25
Completing the TECS-TRAIN course is likely to improve learning outcomes.	4.25

The Review Panel was also given an opportunity in the survey to make comments on each section. Some of the highlights from this section are shown below:

- *I think this IS the next step for ECU! Way to go!!*
- *I am reviewing the modules right now. So far THEY ARE AMAZING!!!*

- *Overall, I rate this training as excellent. I will use this with ALL new faculty members and also recommend that veteran faculty refer to various sections as need be.*
- *Thank you for asking me to be part of this, and when can I add my faculty to it?*
- *Overall I think the idea of having a mentor "work through" the material with the faculty member is a great way to share the experience while building a learning community. Will the mentor have a rubric that he/she will need to complete or will they have a journal template for working their way through the process with each faculty member?*
- *This is a Pioneering effort and a real start at doing meaningful mentoring in the College.*
- *I learned new info in both the Syllabus and Bb modules and even posted in the Bb blog!*
- *If participants can be motivated to complete the portfolio I think it will be a very effective assessment.*
- *I intend to have all of my new faculty review it.*
- *I really like the way you put together the Bb tutorial in module 2. I think this is helpful to both new faculty and faculty who just need to catch up.*
- *Seeing the Centra session would it be possible to get some very short (30 - 60 secs) video clips of an ECU faculty to talk about how they use Centra in their class, or how great it is, or how it allows students to interact, or the best tip they know, or shortcut? This might make the lesson a bit more "personal" for a faculty member.*

3. Four Learning Modules

TECS-TRAIN includes four learning modules: Syllabus and Standards, Blackboard Course Management Shell, Synchronous Tools, and Asynchronous Tools. There are three components in each learning module: introduction, content, and anecdotes. The Introduction provides an explanation of the purpose for the module. The Content section presents best practices and critical information that must be applied to activities in the Mentee's Digital Portfolio. The Anecdotes section is where faculty post entries about real life experiences with the topics presented.

3.1. Module One: Syllabus and Standards

A syllabus is a contract between the instructor and students. It specifies the topics that the course will be addressing. It states the instructor's expectation and shows anticipation of each student's involvement and learning outcomes. Creating a good syllabus is not an easy job for either new faculty members or experienced instructors. Therefore, this module is designed to help faculty create a syllabus that addresses "ECU Standards for Excellence in Distance Education and is compliant with SACS Standards required for accreditation.

The module begins with a review of twenty-one DE Standards developed by the ECU Online Quality Council, Subcommittee on Standards. Each of the standards relates specifically to components to be included in the course syllabus. The module will then move from standards to creation of a syllabus. Templates from four departments are provided and each addresses specific requirements of that department. By referencing those templates, faculty have models to help them develop their ideal syllabus. Finally, a checksheet is provided to allow faculty to evaluate how well the developed syllabus meets ECU’s standards for distance education. The checksheet includes “ECU twenty-one DE Standards” and each uses a three-level scale (3 = well done, 2 = some coverage, and 1 = not covered). Table 3 shows ECU twenty-one DE Standards.

Table 3. ECU Twenty-one DE Standards

#	Standard
1	Syllabus is easy to navigate
2	Faculty provide biographical info in syllabus
3	Indication that Students provide biographical info in course content
4	Minimum technology competencies stated
5	Prerequisite knowledge clearly stated
6	Learning objectives stated/ measurable outcomes
7	Learning objectives address content mastery & critical thinking
8	Instructions provided for achieving objectives and outcomes
9	Evaluation methods measure achievement of objectives and are appropriate for DE environment
10	Grading methods and polices are clearly stated , provide feedback, and are appropriate for DE environment
11	Instructional materials, resources and content have sufficient depth and breadth to achieve learning outcomes
12	Resources and materials are accessible
13	Interaction between student and instructor and between students
14	Activities to generate interaction align with course objectives and outcomes
15	Clear standards established for interaction, instructor response time, and turn-around of email and grade posting
16	Instructional tools and media support learning objective and are integrated with course material
17	Instructional tools and media guide student to become a more active learner.
18	Instructional tools and media used are clearly defined and easily attained
19	Course includes information on academic assistance available at university, College, department and course level
20	Web pages provide equivalent alternatives to auditory and visual content
21	The Syllabus provides the university’s ADA Compliance Statement

3.2. Module Two: Panel Course Management Shell

Since 1999 Blackboard platform has been adopted by ECU as a standard course management system used by both instructors and students. It is a virtual learning environment that runs on the

internet and allows access for both face-to-face and DE students. It enables instructors to share instructional resources, post assignments, setup blogs, journals, and discussion Panels, create surveys, and deploy quizzes and tests. By reading the information and completing learning activities posted on Blackboard, students are able to actively engage in learning and communicate with classmates and the instructor.

This module helps faculty members who have never taught online using the Blackboard course management system. It also provides useful information for experienced faculty who may not have used Blackboard for some time and need a refresher. This module guides the instructor through the basics of the course shell and the various aspects of setting up the course shell for instruction. It also helps new faculty get started logging into Blackboard and provides step-by-step guidance through the basics of the course shell. Having finished the learning of this module, the new faculty member will know how to develop an easy navigational system, improve consistency, and provide a course layout that effectively assists students in their learning process. Figure 3 shows a Blackboard course site.



Figure 3. A Blackboard Course Site

3.3. Module Three: Synchronous Tools

For many years instructors have taught classes of students meeting face-to-face at a certain place and time. No matter what the traffic or weather condition is, the students had to physically and punctually report to the designated classroom or laboratory. With the advance of the internet and computer and information technology, distance education has become an alternative choice for many students who have difficulties attending classes, have work conflicts, or live in a remote area making travel to campus impossible or impractical. With online learning, students can learn from anywhere.

Generally, there are two major classifications of learning used in distance education: synchronous learning and asynchronous learning. Synchronous learning is defined as any learning event where interaction happens simultaneously in real-time. This requires that learners attend class at its scheduled time in a traditional classroom, on the internet, or through distributed or e-Learning technologies. Asynchronous learning is defined as “Any learning event where interaction is delayed over time. This allows learners to participate according to their schedule, and be geographically separate from the instructor.”³ With the rapid development of new technologies, there are a variety of software tools such as video conferencing tools, blogs, wikis, and message boards, which are used today for distance education. Selection of appropriate tools is dependent on factors including: student learning styles, instructor preference, ease of use, time that is available to accomplish learning outcomes, and cost. This learning module explores two important tools that can be used for synchronous learning. They are Saba Centra and the ECU Global Classroom.

Saba Centra⁴ is supported by Information Technology and Computing Services (ITCS) at ECU. It is a learning platform that provides a virtual online meeting environment for faculty and students who connect to the server from anywhere in the world. Once the class members connect to a Centra session on the Internet, digital media, such as video streams, audio files, and PowerPoint presentations, can be shared with all meeting attendees. In addition, all Centra meetings can be recorded for those who are unable to join the live meetings to watch the recordings at a later time. Figure 4 demonstrates a screen shot of Saba Centra session.

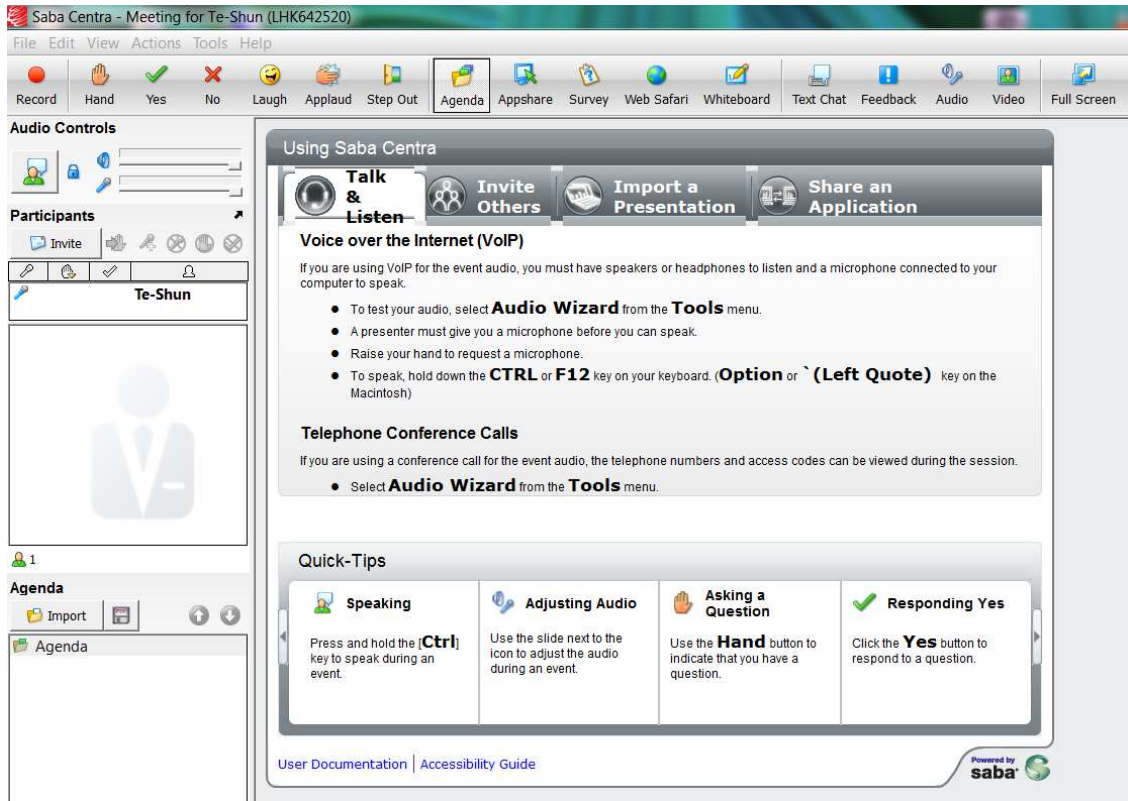


Figure 4. A Saba Centra Session

The ECU Global Classroom provides an online web-casting platform for supporting internet-based video conferencing, delivering blended or online lectures and courses, and facilitating collaborative learning sessions, in both synchronous and asynchronous ways⁴. Videos and lectures recorded through the Global classroom can be accessed from the Mediasite server with permission control. The Global Classroom and Mediasite technology incorporate multiple ways of communication, i.e., audio, visual and kinesthetic. Figure 5 shows one section of the control room in the Global Classroom.

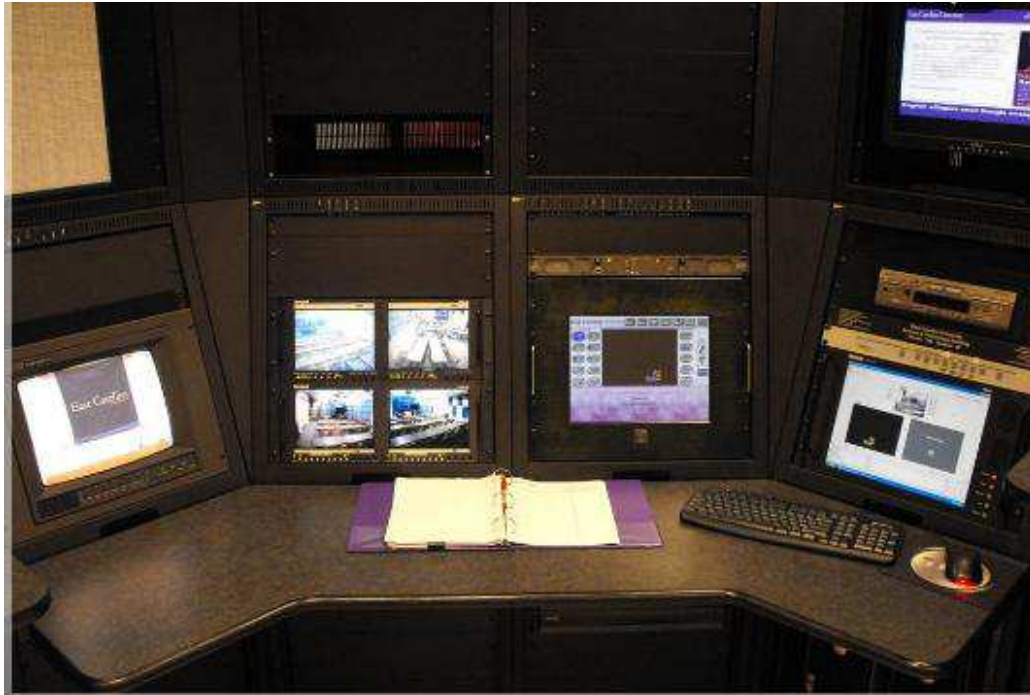


Figure 5. The Control Room of the Global Classroom

3.4. Module Four: Asynchronous Tools

While synchronous learning enables students to meet at the same time for discussions, presentations and collaboration, asynchronous learning enables students to learn at different times and locations. Instructors using asynchronous learning methods must think carefully about how they want to provide students with learning materials that can be studied at their own pace, when time is available. The environment should also provide a place where the instructor and students can communicate with each other without having to meet at the same time.

Here in module 4 we introduce two asynchronous learning tools that are supported by ITCS at ECU. One is called Tegrity⁶. Tegrity is a software lecture-capture system integrated with Blackboard. Both students and faculty use Tegrity to make instructional materials that include audio, video, and computer screen activity. With this tool, Power Point presentations or software demonstrations with accompanying audio narrative can be prepared and made available through a published URL for viewing anytime and anywhere.

The second tool is the Blackboard Discussion Board which is used by many instructors for asynchronous class discussion. The Discussion Board provides a meeting place where all class members can participate in the class discussion. When the Instructor provides a forum on a specific topic, class members can participate in discussions without all the members being online at the same time.

4. Digital Portfolio

It should be remembered that the final product developed by the Mentee is the Digital Portfolio. This contains exhibits from the required learning activity or assignment in each module. But there is much more to the portfolio than this. Here in this section we will discuss how a female Mentee in the pilot project developed her Digital Portfolio.

Step 1: The Mentee started by reviewing each module in progression. The first module was on “Development of a Syllabus that is Compliant with Quality Standards” from accrediting bodies and the academic unit providing the courses.

Step 2: While studying this module she also reviewed content from a repository of model syllabi and a standard syllabus template developed by our College. After reviewing the module and these templates, the Mentee had a pretty good understanding of what a good syllabus should look like.

Step 3: With this knowledge, the Mentee drafted a syllabus for the online course that she would be teaching in the future. A checklist was also available in the content section of the module and the Mentee used this to evaluate her syllabus based on the specific requirements and expectations for a distance education class. The Mentee realized that having gone through the standards and other model syllabi really broadened her horizon on creating a DE syllabus. However, there were still areas where improvements needed to be made in the Mentee’s draft syllabus.

Step 4: These areas were identified while comparing the draft with the expected criteria listed on the checklist. These weaknesses were addressed to the satisfaction of her Mentor. A final copy of the syllabus was created.

Step 5: There certainly were many learning moments. Some of these were really worth sharing with the other Mentors and Mentees. These stories were shared in the anecdotes repository. The Mentee understood just how important it was to add these anecdotal comments when she implemented what she had learned in future classes.

Step 6: Now it was time to move on to the second module. She began by reviewing the “Blackboard Course Management Shell” module. The Mentee was already familiar with the various aspects of setting up the course shell for instruction using Blackboard. However, by reviewing the module, the Mentee got a better insight on the layout of a successful course. The tips were very helpful in developing what she felt was an improved course shell that would assist the learning process by reducing confusion and creating consistency. Notes were made to aid in redesigning her new course later in the semester.

Step 7: The third module was on Synchronous tools. This learning module explored two important Synchronous Tools that our university uses to promote interaction and

collaboration: Saba Centra and the ECU Global Classroom and Mediasite. The Mentee studied the content covering the use of Saba Centra. Then she tested the use of Centra with her Mentor.

Step 8: The Mentee then developed a sample lesson for use in her class and shared this with her Mentor. The lesson was evaluated and improved based on the feedback. One challenge related to the use of “App Share” for desktop sharing with this tool was perfect for an anecdote to be added later.

Step 9: This is the module on assessment. The Mentee began by reviewing asynchronous tools that could be used in evaluating student performance. Using one of the tools, an assignment/project work plan was developed. Based on the feedback from the Mentor on how well the assignment was written and distributed to students, the Mentor was able to refine a learning activity presented in her own TECS-TRAIN Digital Portfolio.

Step 10: Now the Mentee has completed the activities and assignments associate with each of the four modules. However, this is really only the beginning of an adventure that will involve continuous improvement. The faculty Mentee decided to revisit the TECS-TRAIN toolbox to see what other tools might be used in her classes. There she found thirteen tutorials with instructions for implementation. Most of these tools were on methods for collaboration and problem solving. Mentees are encourage to list additional tools they recommend be added to the Toolbox for the benefit of the other trainees.

5. Results from Pilot Project

All of the objectives for the pilot project were accomplished. All Mentors and Mentees were certified and twelve faculty members are now in the Mentoring Cadre ready to work with new Mentees when the program is approved for implementation. There were eight major learning outcomes from the pilot project:

- Mentees were introduced to a variety of teaching tools and technologies to learn about and consider for use with different classes.
- By going through the modules and by interacting with the Mentor and the other teams in this training, the Mentee got a better understanding of some of the tools and their capabilities to use them to enhance the learning experience of students.
- Mentees were able to demonstrate through performance their understanding of different quality standards in their disciplines.
- Mentees discussed the appropriateness of different platforms and software for applications, class sizes, student types, types of content, teaching styles, and learning styles. This was new territory that Mentees were not aware of prior to their training.
- Through interaction and discussion with other colleagues in the training, Mentees were able to make a sound decision as to which learning/teaching tools would be the most

suitable for their teaching style and the type of courses they would be assigned to teach in the future.

- It was agreed that Blackboard is a great tool to manage a course. However, it does have limitations in terms synchronous tools for communication and collaboration.
- Most Mentees found Saba Centra to be a very effective means for synchronous interaction in distance education classes.
- A final review of the portfolio by the Mentor, their Chairperson, and the facilitator of TECS-TRAIN is required to ensure that the Mentee has completed their portfolio in a professional manner worthy of their being certified and added to the pool of Mentors who are ready to train/Mentor the new trainees. More work is needed on refining this process in each department prior to full implementation.

5. Conclusions and Recommendations

Faculty participating in the pilot and reviewers indicated that TECS-TRAIN as a Certification and Mentoring Program for faculty teaching blended and distance learning courses is something that needs to be implemented and refined through continued faculty input. An active Mentor/Mentee partnership is important to the continued advancement of TECS-TRAIN and improvement of learning outcomes. Programs and courses from each of the Departments in the College emphasize the study and application of Technology. However, there are many differences in instructional strategies, tools, and techniques used by faculty in these departments. Because of these differences, each Digital Portfolio is special and unique, and serves as an important vehicle for sharing expertise, ideas, and effective strategies among faculty. We recommend that the application-to-practice learning activities at the end of each module be completed as soon as possible after reading and studying the content of the module. The procedure that is presented enables the Mentee to creatively apply what was learned in the module, evaluate their own work, and interact with their Mentor to discuss their results. One of the most important features of this course is that it is a living course, where content must change through faculty revision and up-dates. The anecdotal stories and comments are very important. It must also be realized that stipends to faculty for completion of the modules and certification to the Mentors for coaching cannot continue to be provided. This is why encouragement from the Administration requiring faculty to include professional development activities such as TECS-TRAIN and include reference to these in their Faculty Annual Reports is so important. This will provide the kind of motivation needed and faculty will be willing to undertake the work that is needed here to become certified.

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