Web Modules: Integrating Curricula and Technology Standards

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The purposes of this article are to provide the sequence of learning events about the integration of curricula and technology using modules prepared by the Southeast Teachers Are Revitalizing Teaching Through Technology (START) Technology Team and to describe the impact these technology modules had on university faculty and candidates at Alabama State University. The START technology workshops were funded by a grant from the United States Department of Education-Office of Postsecondary Education. The purposes of the grant were to train higher education faculty how to integrate START and science curricula using tenets of the constructivist theory; then replicate the content of the technology modules at the post-secondary level.

Participants who attended replication workshops completed two evaluation sheets: (a) Self-Evaluation Checklists and (b) START Evaluations. Both evaluations were used to determine whether learning objectives of the workshop had been met and to make decisions about how to improve the quality of the next workshop.

The implementation and modification of START technology modules began to facilitate life-long learning among workshop participants because of their abilities to:
(a) access teaching resources such as web-quest lesson plans;
(b) design formative assessments structured as rubrics; (c)
prepare curriculum and concept maps used to organize, display, and share data; and (d) organize electronic portfolios which demonstrate achievement and professional development.

As a result of a grant from the U.S. Department of Education-Office of Postsecondary Education, selected higher education faculty, graduate and undergraduate candidates from Alabama State University (ASU) were trained how to integrate curricula and technology standards. A Preparing Teachers to Use Tomorrow’s Technology (PT³) grant awarded to the university during 1999-2004 provided the mechanism for two university faculty members to participate in the Southeast Teachers Are Revitalizing Teaching Through Technology Institute (START), a four-day professional technology workshop for 24 higher education faculty who represented six southeastern states and who were involved in the development of science curricula. The purposes of this article are to: (a) provide an overview of Project START (2000); (b) explain the theoretical basis for the design of replicated workshops at the university level; (c) describe methodologies used by the START Institute Development Team to train university faculty about how to integrate START technology modules and science curricula; (d) articulate how the components of constructivism were used to sequence learning activities at the START Institutes and the replication of workshops at the university level; and (e) reveal how information gained from Project START Technology Institutes improved the technology skills and impacted the communication among higher education faculty, preservice, and inservice teachers who are reflective practitioners and life-long learners at Alabama State University.

Overview of Project Start

Principal investigators, Judy Brown, Ed.D., Vice Presidents of Programs at Miami Museum of Science and Marilyn Neff, Ed.D., Director of External Programs-School of Education University of Miami, envisioned Project START as an opportunity to provide technology-in-motion consultants, university faculty from colleges of arts and science; and faculty from colleges of education, with technology-rich resources and training that would help prepare future preservice and inservice teachers integrate technology into the science curriculum. In an effort to bring their vision to the forefront, 24 higher education faculty from six southeastern states,
Alabama, Florida, Georgia, Mississippi, North Carolina, and South Carolina, (http://start.miamisci.org/conference/welcome/startmovie.php), were invited to attend a Project START Institute at the Miami Museum of Science in Miami, Florida.

The START Institute Development team modeled to faculty trainees how to: (a) use START technology modules and (b) integrate START technology modules into the science curriculum using tenets of constructivism. Also, the START Team scheduled time frames for faculty trainees to collaborate as a team (technology-in-motion consultant, arts and science faculty, and college of education faculty) teaching unit. The team-teaching units were able to examine exemplary constructivist teaching and learning practices, brainstorm for ideas relevant to technology integration with science content, and plan for replication workshops at their home universities. Additionally, the START Institute Development Team agreed to provide continued support to the team-teaching units by: (a) offering a technology friendly START WEB-SITE that included researched-based resources (http://start.miamisci.org/) and (b) making available online mentoring and technical support for the team-teaching units. Finally, the trainees (team-teaching units were made aware of a regional conference planned for November 16-18, 2001 at the Smithsonian National Museum of National History in Washington, D.C. The purposes of the conference were to highlight successes and challenges while implementing START technology modules at the university level and to recommend suggestions for improving future collaborative team-teaching workshops for higher education faculty, preservice and inservice teachers.

THEORETICAL BASIS FOR INSTRUCTIONAL DESIGN OF START REPLICATION WORKSHOPS

Increasingly, educational institutions are being encouraged to experiment with tools of technology that promote collaborative working environments, which are in turn, perceived to help in the development of more autonomous responsible learners (International Society for Technology in Education, 2000). The notion of collaborative working environments are embedded within the constructivist framework, which lends itself to the belief that learners who are engaged in social interactions are able to form and revise their ideas as a lesson or project progresses with time (Brown, 1994). Instead of acquiring technological skills using step by step instructions from
a textbook or receiving knowledge in an already organized format from an instructor, learners are encouraged to play active roles in the learning process by sharing and gathering information from other learners who are able to provide peer support and guidance. This strategy, stated Eggen and Kauchak (2001), helps to persuade learners to use their current understanding of technology as a tool to learn new technological tasks or skills; thus the proposed constructivist belief of a more self-directed, responsible, interdependent, learner emerging within a social learning setting.

Also embedded in the constructivist theory is the value of authentic tasks, especially when learners use prior understanding to acquire or to improve technology skills required for real-life situations. Researched literature reported by Jefferies (2003), revealed an exponential growth in the interest to develop technological resources to facilitate and enhance learning experiences within higher education, which is stimulated by the rapid expansion of networking capabilities. For example, digital technology has already begun to change how students learn in such settings as elementary and secondary schools; online courses; skill-training centers; and traditional classrooms. In addition, Forcier 1996, emphasized the significance of creating data base systems, which organize large amounts of researched information shared in collaborative learning settings. Internet distance leaning courses, designed for the autonomous learner or for cooperative group activities, are now offered at more than 1,100 colleges and universities in the United States and in other countries, resulting in learning outcomes, which become much more interesting and even exciting when digital technology is used (Newman & Scurry, 2001).

Until now, most technological tools have had relatively little impact on pedagogy in higher education. Yet, the idea to encourage higher education faculty to participate in professional development workshops that enhance content pedagogical knowledge using technology is essential (Marinelli & Pauch, 2004). Also noted by Marinelli and Pauch, is how technology has changed the way we communicate in teaching and learning environments. Two examples of technological communications are those features of e-mail, which allow higher education faculty and students to communicate online; and internet search engines that change how students can locate and share information with others. Such tasks use tools of technology inclusive of organizing and communicating information, both of which are central aspects to the art and science of teaching.
Integration of technology and pedagogy involves a tenet of constructivism where questions or problems are posed to tap into the curiosity of learners. As learners begin to interact with each other, examine or challenge ideas, instructors can use technology to simulate or model topics, which may otherwise be difficult to explain or illustrate with traditional classroom resources or an hands-on manipulative. When instructors are explaining a lesson or project, technological demonstrations have the potential to focus on learners’ understanding of concepts; thereby increasing students’ efforts to complete an assignment and enhance their sense of self-efficacy. Self-efficacy is defined as an individual’s belief in their capabilities to accomplish a specific task (Pintrich & Schunk, 1996).

Another vital component of the constructive approach is the ability of students to transfer newly acquired concepts and their understanding of these concepts to different situations. Effective pedagogy can target one’s ability to use research skills through the Internet, and then apply content knowledge to complete a task online (Kauchak & Eggen, 2003). Moreover according to McLoughlin and Luca (2002), collaborative learning through the Internet, has been endorsed as an effective pedagogical strategy, which fosters skills of critical thinking, analysis, and communication between higher education faculty and students. Instructional strategies of this nature, stated Kauchak and Eggen, afford instructors opportunities to assess an individual’s abilities to create unique and finished products. Therefore, as cited by McLoughlin and Luca, greater recognition of these technological potentials can be used to increase dialogue between students and higher education faculty by using online instruction as course support systems.

Also, alternative assessments of online tasks embrace the constructivist framework. These assessments are being emphasized because they directly measure student performance using real-life tasks (Worthe, 1993). Examples of alternative assessments include the:

1. design of electronic portfolios;
2. use of desk-top publishing to write a book and include illustrations;
3. application of technical skills to design and construct architectural projects;
4. summary of concepts in web diagrams; design and use of spreadsheets;
5. organization of lesson plans and assignments as web quest presentations;

6. use of technology to provide alternative methods for solving mathematics problems relevant to students’ real-life experiences; and

7. observation of students completing a science experiment.

The necessity to evaluate alternative assessments is one of the principal beliefs of constructivism. Evaluation, although often times used interchangeably with assessment, refers to decisions instructors make based on performance based measurements (Kauchak & Eggen, 2005). Long term goals and measurable objectives should be a part of the evaluation process. Stating goals and objectives provide the framework which guides instructors and learners towards the expected outcomes. Clear descriptions of the content or skills to be learned helps students understand what is required of them and serves as a guideline for selecting appropriate instruction by the teacher, both of which outlines a course of action for the evaluation of alternative assessments (Gronlund, 1993); according to Kauchak and Eggen, the value of alternative assessment lies in their capabilities to link knowledge and skills to realistic tasks.

Research from Kauchak and Eggen (2005), provided three examples of evaluation instruments used for alternative assessments, which are checklists, rating scales, and rubrics, all of which can be accessed from the Internet. Checklists are written descriptions of dimensions that must be present in an acceptable performance-based format and involve systematic observations by the teacher. When checklists are used, students’ performances are simply checked off rather than described in detail. Checklists are useful when performance behaviors either do or do not exist, for example, “_____ student provides hypothesis in a written form;” and teachers must keep in mind that some hypotheses will be written better than others and the checklist will not identify criteria for writing the hypothesis. However, rating scales are a combination of checklists with written descriptions of dimensions and scales of values for rating each dimension; and allow for a better assessment of quality than is possible with checklists.

An extension of the rating scale is the rubric, which includes four effective criteria for evaluating alternatives assessments (Messick, 1994):
1. one or more dimensions that serve as a basis for assessing student performance;

2. a description of each dimension;

3. a scale of values on which each dimension is rated; and

4. definitions of each value on the scale.

Clearly written criteria that are organized into scoring rubrics provide models of excellence and performance targets for students and teachers as well as increase reliability or the extent to which measurements are consistent and validity or the extent to which an assessment measures what it is suppose to measure (Stiggens, 2001; McTighe, 1997).

Southeast Teachers Are Revitalizing Teaching Through Technology (START)

A vision for training professional teams to use modules that integrate curricula and technology began with the START Consortium at the Miami Museum of Science in Miami, Florida during November, 2000. Alabama State University was represented at the START Consortium by Cheri White Hayes, Technology-in-Motion Consultant, and Carol J. Dawson, Ph.D., science education, graduate faculty for curriculum development and instructional strategies at Alabama State University.

The START Team planned extensive four-day sessions for 24 higher education faculty who received technology training inclusive of:

1. navigating, discovering, and evaluating on-line resources;

2. exploring different on-line teaching strategies;

3. collaborating with peers about additional research and modification techniques;

4. creating professional portfolios and web page designs;

5. using videoconferencing as a method of communicating with other professionals;
As team teaching units of two or three group members, each START participant was provided with the START Trainer’s Guide containing power-point presentations, performance-based assessments, and evaluation resources needed to replicate the START workshops. Each section of the START Trainer’s Guide contained an overview of knowledge and skills that should be acquired, checklists, presentation notes, sign-in sheets, name tags, evaluation summary forms, and additional resources for team-teaching units. All presentations, learning cards, and other resources for each technology module were made available on the START web-site at: (http//start.miamisci.org/trainerresources/).

Timeline of Events Following START Consortium

Checklist and rating scale surveys were distributed to potential participants and were used to obtain information about the attendance of participants, their interests, and technology ability levels, respectively. Immediately following the return of surveys, decisions were made relevant to framing goals, objectives, and assessments. Brochures were mailed to participants who were committed to attending a Saturday workshop and these brochures explained the nature and expected outcomes of the workshop. Goals of the pilot workshop were based on the International Society for Technology Education, NETS Project 2000 and were designed to help participants become:

1. capable information-technology users;
2. information seekers, analyzers, and evaluators;
3. creative and effective users of productivity tools;
4. communicators, collaborators, publishers, and producers; and
5. informed, responsible, and contributing citizens (International Society for Technology in Education, 2000).
Performance-based objectives and assessments were designed for participants to:

1. discuss issues and concerns relating to web publishing;
2. access and evaluate science web sites; and
3. create a web page using education curricula such as syllabi and lesson plans.

Then the replication of START technology modules began as a pilot workshop presented at ASU in the Technology Laboratory of the inservice teacher center, April 2001, for the purpose of providing technology training to elementary science teachers and ASU College of Education faculty. University faculty included representatives from the College of Education in the areas of Health and Physical Education, Special Education, Secondary Science Education and a professor from the College of Arts and Sciences (Table 1).

<table>
<thead>
<tr>
<th>Grade Levels</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1</td>
<td>1</td>
</tr>
<tr>
<td>Grade 3</td>
<td>2</td>
</tr>
<tr>
<td>Grade 4</td>
<td>2</td>
</tr>
<tr>
<td>Grade 5</td>
<td>3</td>
</tr>
<tr>
<td>University Faculty</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

Participants received eight hours of technology instruction; inservice teachers used the workshop to acquire professional development credit hours; and each participant completed two evaluation sheets: (a) Self-Evaluation Checklists were used to determine whether a skill had been acquired, to help maintain the focus of participants, and to encourage participants to complete assignments. Checklists are written descriptions of performance-based tasks and should be accompanied with continuous observations of teachers or facilitators (Kauchak & Eggen, 2004). (b)
Predesigned START Evaluations were used to determine outcomes of the workshop and this information was submitted to the START Team in Miami, Florida (Table 2 and participant’s comments). This initial process became a guideline for modifying and designing future assessments and evaluations.

**Table 2**

Pilot Workshop-Responses to START Evaluations

<table>
<thead>
<tr>
<th></th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy to use web page module</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Participants who had a better understanding of how to create a web-page after completing the web-page module</td>
<td>9</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Participants who indicated practicality of integrating this technology into their current teaching environment</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Providing a pilot web publishing workshop generated positive feedback from workshop participants. Four comments from participants of this workshop were:

I expected to learn the basics of how to design a web page, and I was able to learn how to design a web page that will help me teach science lessons that are interesting, fun and meaningful for students.

The workshop provided information useful for organizing data about students.

The web-pages will be valuable technology tools as I prepare for future courses.

I wanted to learn how to design a web page to: (1) teach fall courses, (2) assist students in becoming more successful in researching information on the Internet
(3) organize course-work more efficiently during office hours and (4) create health tutorials for students.

Feedback from the START Team’s analysis of submitted evaluations indicated using data from the pilot workshop to improve planning, implementing and evaluating processes as needs and skills of participants changed.

Fall 2001 Revised Workshops

Although START technology modules were designed for science educators, the team-teaching unit at Alabama State University revised technology modules, assessments and evaluations for participants to use across the curriculum. Therefore, performance-based objectives for three fall 2001 workshops were:

1. searching for information on the web and evaluating web resources; and

2. enhancing learning by designing internet field trips in participants’ content areas.

Table 3
Fall 2001 Workshops: Responses to Revised START Evaluations

<table>
<thead>
<tr>
<th>Content Areas</th>
<th>Biology</th>
<th>English</th>
<th>History</th>
<th>Math</th>
<th>Music</th>
<th>P.E.</th>
<th>Social Science</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12</td>
<td>19</td>
<td>3</td>
<td>10</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>53</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree: SA</th>
<th>Disagree: D</th>
<th>Agree: A</th>
<th>Strongly Disagree: SD</th>
<th>Uncertain: U</th>
<th>Participants: N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am more aware of how to use the Internet to locate and evaluate web resources.</td>
<td>49</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>53</td>
</tr>
<tr>
<td>2. Easy to Use Technology Modules</td>
<td>41</td>
<td>7</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>53</td>
</tr>
<tr>
<td>3. Participants who had a better understanding of how to locate Internet Field Trips in their content areas</td>
<td>43</td>
<td>8</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>53</td>
</tr>
<tr>
<td>4. Participants who indicated practicality of integrating Internet Field Trips in their content areas.</td>
<td>36</td>
<td>11</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>53</td>
</tr>
<tr>
<td>5. Intended outcomes of the workshop were met</td>
<td>47</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>53</td>
</tr>
</tbody>
</table>
Reports of outcomes from fall 2001 workshops provided at ASU were presented at a START Institute Workshop in Washington, D.C. Presentations from the team-teaching unit were provided to: (a) inform the START Team about revised procedures for using START Technology Modules at the university level and (b) propose plans for future workshop revisions. Proposals for future technology workshops included: (a) obtaining continued support from university administrators, (b) planning and implementing additional technology workshops, and (c) targeting graduate candidates as potential participants for technology.

Closing activities at the START Institute held in Washington, D.C. involved encouraging team-teaching units at the university level to showcase degree-seeking candidates and university faculty working collaboratively at future technology workshops; video images of continued technology workshops were submitted to: http://start.miamisci.org/calendarreplication.html Emphasis was placed on the importance of follow-up visits with degree-seeking candidates who were able to introduce these modules to secondary school students.

**Spring 2002 Revised Workshops**

After presenting a proposal for revising START technology modules and the evaluation process, the team teaching unit at Alabama State University began planning for three technology workshops. The purposes of the workshops were to integrate curricula and technology because individuals responsible for the design of curricula should be able to use technology effectively (International Society for Technology in Education, 2000). To accommodate the different schedules of 40 graduate candidates, two workshops were planned for April 2002. Twenty-three participants attended the first workshop and 17 participants attended the second workshop. Objectives for both workshops were to:

1. search for information on the web and evaluate web resources;
2. locate examples of curricula in other states;
3. enhance learning by designing curricula;
4. submit curricula design projects as a web page; and

5. use the Internet to research, organize and apply information relating to curriculum planning, development and improvement.

Table 4
Spring 2002 Workshops: Responses to Revised START Evaluations

<table>
<thead>
<tr>
<th>Content Areas</th>
<th>Biology</th>
<th>English</th>
<th>Guidance and Counseling</th>
<th>History</th>
<th>Math</th>
<th>P.E.</th>
<th>Social Science</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13</td>
<td>10</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>40</td>
</tr>
</tbody>
</table>

| 1. I am more aware of how to use the Internet to locate and evaluate curricula web resources. | 11 | 29 | 0 | 0 | 0 | 40 |
| 2. Easy to Use Web Design Technology Modules | 3 | 23 | 0 | 14 | 0 | 40 |
| 3. Participants who had a better understanding of how to locate and evaluate curricula from other states | 36 | 4 | 0 | 0 | 0 | 40 |
| 4. Participants who had a better understanding of how to design web pages | 32 | 5 | 0 | 3 | 0 | 40 |
| 5. Intended outcomes of the workshop were met | 38 | 2 | 0 | 0 | 0 | 40 |

Selected Comments from Three Participants

Combining the technology and curriculum activities was a great idea.

Those of us who teach math are going to plan math lessons that teach our students how to design online math portfolios.

At first, I had difficulty following directions but help from other participants along with directions from both facilitators were very helpful.

Fall 2002 and Fall 2003 Online Courses

After the completion of two technology workshops held in the spring of 2002, design of an online course was recommended to replace the third technology workshop. Knowledge gained and skills acquired from START
Institutes were used to plan and implement online courses for fall of 2002 and spring of 2003. Samples of degree-seeking candidates’ web-based products were organized in the summer of 2003 for display at the fall 2003 accreditation review at Alabama State University.

**Spring 2004-Completion of Project START**

Project START came to fruition in April, 2004. Goals, objectives, performance-based assessments, and evaluations of technology workshops were organized and submitted to Project Start’s principle investigators for analysis and evaluation of data. Also, video images of participants working collaboratively and the university web-based course syllabi were provided to the PROJECT START TEAM in Miami, Florida, April, 2004.

**Fall 2004 Application of Technology Skills**

Although the Southeast Teachers Are Revitalizing Teaching Through Technology (START) Project was completed at the end of the 2004 spring semester, integration of curricula and technology modules continued. Fall of 2004, 40 graduate candidates enrolled in an instructional strategies course and designed web quests as formative assessment projects. Also, the course required candidates to access internet sites that would facilitate the design of concepts maps and rubrics. Discussions among inservice teachers indicated students’ preferences for using concept maps rather than answering questions at the end of chapters or outlining concepts from the textbook. These discussions from secondary education teachers who taught concepts from different content areas, also indicated students’ enthusiasm whenever they were able to design rubrics for assignments and projects.

**Spring 2005-Application of Technology Skills**

For the preparation of a summer curriculum graduate course, 25 pre-enrolled graduate candidates were required to attend an electronic portfolio development workshop in May, 2005. The use of portfolios, a form of
alternative assessment, has the advantage of involving students in the design, collection, and evaluation of learning products (Kauchak & Eggen, 2005). Because portfolios are cumulative and relevant to students’ ongoing experiences, portfolios can provide a motion picture of students’ progress instead of snapshots of achievement tests and quizzes (Ziomek, 1997).

Table 5
Responses from Participants Completing Electronic Portfolio-Workshop

<table>
<thead>
<tr>
<th>Content Areas</th>
<th>Bio. 04</th>
<th>Eng. 07</th>
<th>History 05</th>
<th>Math 03</th>
<th>Science 04</th>
<th>Technology Education 02</th>
<th>N 25</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The content of this program met my expectations.</td>
<td>22</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>2. The program objectives were met.</td>
<td>21</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>3. The method of instruction was appropriate for the objectives of the program.</td>
<td>21</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>4. The presentation was clear, understandable and well organized.</td>
<td>22</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>5. I plan to use the information from this program to teach students in my content area.</td>
<td>23</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>6. I think this program will help me become a more effective teacher as I integrate technology and curriculum in my content area.</td>
<td>22</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>7. I would recommend this program to fellow teachers and administrators.</td>
<td>22</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>8. I would attend other programs sponsored by this inservice center</td>
<td>22</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>9. The length of time for this workshop was about right for the amount of tasks we completed.</td>
<td>23</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>10. The inservice center helps to meet my professional development needs and the needs of my school system.</td>
<td>22</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>

Strongly Agree: SA Agree: A Uncertain: U
Disagree: D Strongly Disagree: SD Participants: N

Selected Comments from Electronic Portfolio Workshop Participants

I prefer the online portfolio to the binders; time is saved by not needing to print work from the computer then organize it into the binders.
We discovered that it is easier to research, download and re-organize information using electronic portfolios.

The technology-in-motion consultant and the course professor provided guidance about how to organize assignments according to curriculum guidelines and explained how curriculum and NETS standards are related.

After learning this skill, I plan to teach my students how to design online portfolios.

I would recommend this training for all teachers, but we need it more than once a year.

This is by far the most interesting and helpful technology workshop that I’ve attended because we had to know and use so many technology skills and then we were able to learn new skills as well.

The team-teaching modeled by the technology consultant and the university professor provided instructional strategies we plan to use with our students.

Assistance with re-structure, organization, assessments, evaluation and online survey revisions were provided by Shawndra Johnson, a technology-in-motion consultant at Alabama State University.

SUMMARY

A salient question is: How has the technology modules provided by the START Consortium impacted higher education faculty graduate, and undergraduate candidates at Alabama State University? The technology models provided long-term training for a diverse group of educators. At the onset of the START technology training, two higher education faculty members, a technology-in-motion consultant and a science methods professor, were able to work as a team while collaborating with other higher education faculty, technology-in-motion consultants and the START Team in Miami, Florida. Technology portfolios were given to the ASU team; workshops were planned and implemented for selected administrative staff and colleagues, graduate and undergraduate candidates who learned new technology skills or who had opportunities to enhance prior technology
skills. Then workshop participants began to introduce these skills to their elementary and secondary education students.

Collaboration among participants assisted in providing increased dialogue and awareness of technology as a tool for multimedia-based learning. For example, the team-teaching strategies of the technology-in-motion consultant and the higher education faculty member supplemented lecture resources with online research through the Internet.

As a result, active learning using the constructivist approach became a reality for graduate and undergraduate candidates who have different learning and teaching styles. Also, the ability for discussions on the Internet provided opportunities for inservice teachers who were workshop participants to engage in discourse with K-12 students, parents, and teachers; to communicate with other university candidates and higher education faculty; and to keep abreast of educational concerns of stakeholders from the community and from the university.

Thus, the implementation and modification of START technology modules began to facilitate life-long learning among workshop participants because of their abilities to access teaching resources such as web-quest lesson plans, formative assessments structured as rubrics, curriculum and concept maps used to organize, display, and share data, and electronic portfolios, which demonstrate achievement and professional development. With an increased need to communicate globally through the Internet, also came the need for higher education faculty and administrators to negotiate for wireless Internet; video conferences, distance learning teaching strategies, live-text software, and online courses, all of which contributed to the desire of educators to become informed and responsible citizens capable of using technology as a tool to plan and implement; to create and produce; to communicate and collaborate; and to research and publish (International Society for Technology Education, 2000).

References


