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AUTHOR Ireh, Madu; Bell, Ed

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ABSTRACT

This report suggests that teacher education faculty must have opportunities to learn about technology and infuse it into the teacher education curriculum, noting the importance of identifying and designing meaningful technology applications to enhance student learning in the academic disciplines and make clear that technology is for everyone. The Technology Infusion Project (TIP) provides Winston-Salem State University with a comprehensive response to such imperatives. TIP's goals are to align course content with professional standards, enhance collaboration between the School of Education and School of Arts and Sciences, enhance the use and integration of advanced technologies in teacher education, and facilitate the preparation of content- and technology-proficient preservice teachers. Through this initiative, the School of Education has recruited new teacher education students and provided intensive, product-oriented faculty training, facilities, incentives, and partnerships leading to the integration of technology across the teacher education curriculum (product-based approach). This paper presents a rationale for the TIP, describes TIP design and activities, and offers results, lessons learned, and recommendations (e.g., information for student teachers is more current, a high level of intrinsic motivation is required, and involving other disciplines and providing tangible incentives is important. (SM)

Implementing Faculty Professional Development: The Product-Based Model

Paper Presented at the PT3 Grantees Conference

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PRESENTERS

Madu Ireh, Ph.D., Project Coordinator (PT3)
School of Education, Winston-Salem State University, Winston Salem, NC 27110
irehm@wssu.edu
http://gorams.wssu.edu/faculty/irehm

Ed Bell, Ed.D, Project Director (PT3)
School of Education, Winston Salem State University, Winston Salem, NC 27110
belle@wssu.edu
http://gorams.wssu.edu/faculty/belle

A Faculty Professional Development Model for Infusing Technology into Teacher Education

Background

America's schools will need two million new teachers within the next decade (National Center for Education Statistics, 2000). It is estimated that as the number of students and demand for smaller student-teacher ratios increase, many states such as North Carolina will be forced to hire approximately 2000 new teachers over the next 3 years (Office of Student Services, 2002). These teachers must know their students and their content areas, and must have command of an array of pedagogical tools to ensure that *all* students learn. They must be able to use technology to support multiple approaches to teaching complex ideas in classrooms. They must be able to apply advanced technologies enabling students to interact with their content and with each other in a manner that promotes cooperative learning, critical thinking, communication skills, and reasoning power. What is more, they must be able to do these things in a non-discriminatory environment that takes into account student cognitive styles and in such a way that *all* students achieve the highest level of academic success possible.

The majority of those "21st Century" teachers will graduate from several of the teacher education programs in the nation, the School of Education at Winston Salem State University (WSSU) inclusive. But, in a survey of new graduates of teacher education, the US Office of Technology Assessment (1995) in the report, "Teachers and Technology: Making the Connection," found that while more than half of them reported being prepared to utilize tutorials, games, word processing, and publishing applications,

less than 10% felt competent to use multimedia and presentation packages, electronic network collaboration capabilities, or problem-solving applications.

There are several imperatives inherent in the need for and vision of the 21st century teacher. First, higher education institutions must at least double the number of students who enter and successfully complete licensure requirements over the next 5 to 10 years. Second, we must make sure that these teachers enter their profession equipped with the content knowledge and pedagogical skills to ensure a high level of achievement for all students. Third, they must be proficient in the integration of content knowledge, basic and advanced technologies, and constructivist pedagogies. Ensuring the effective use of technology in the classroom suggests other imperatives; simply providing more technology tools is not the answer. We must integrate technology across the teacher education curriculum so that new teachers have the requisite knowledge and skills to do the same within their content specialty areas.

The first challenge in this regard is to provide teacher education faculty with opportunities to learn about technology and to infuse it into the teacher education curriculum. The second is to identify and, in many instances, design meaningful technology applications that enhance student learning in the academic disciplines. Finally, we must make clear that technology is for everyone, that *all* students can and must move beyond the "drill and practice" that often characterizes technology use with poor and minority children.

Technology Infusion Project (TIP), a PT3 grant funded by the US Department of Education has provided Winston Salem State University a comprehensive and sustainable response to the referenced imperatives. The goals of TIP are simply (a) to align course

content with professional standards (International Society for Technology in Education [ISTE], National Council for the Accreditation of Teacher Education [NCATE], Interstate New Teacher Assessment and Support Consortium [INTASC], North Carolina Department of Public Instruction [NCDPI], and other appropriate professional organizations); (b) to enhance collaboration between the School of Education and the School of Arts and Sciences; (c) to enhance the use and integration of advanced technologies as necessary teaching and learning tools in all teacher education courses; and (d) to facilitate the preparation of content- and technology-proficient pre-service teachers. Through this initiative, the School of Education has aggressively recruited new teacher education students and provided intensive, product-oriented faculty training, facilities, incentives, and partnerships leading to the full integration of technology across the teacher education curriculum. The success recorded so far hinges on the product-based model adopted by members of faculty and cooperating teachers participating in the project. The model, nicknamed "product-based approach," has guided and facilitated, significantly, the development of advanced technology skills by teacher education faculty, including those in the College of Arts and Science, at WSSU.

The term "product-based" was adopted based on participants' reactions and comments on the evaluation of prior workshops conducted for faculty by the Center for Innovative Teaching, Technology, Learning and Evaluation (CITTLE) at WSSU. Many participants, especially teacher education faculty, did not like the pattern and the delivery method used by the presenters. Many of them suggested that they would be more interested if the workshops focused on assisting them produce something they could use immediately to improve instruction or research. Rather than sit in a daylong workshop on

how to use this software of that software, many of them preferred being shown how to produce or develop materials and resources they could use directly to improve instruction and research.

For example, rather than conduct a workshop called "FrontPage 2000," in the product-based approach, it would be called "Making Instructional Resources Available for Students On-Line" and all illustrations and demonstrations are based on examples from actual instruction in teacher education courses. Although they will eventually use FrontPage for developing their web pages, emphasis is not placed on learning it, but on using it to develop a web page that will hold various research and instructional resources. Similarly, rather than teach them PowerPoint, they are taught how to develop multimedia-rich presentations for instructional and research purposes using PowerPoint. And rather than teach them MS Outlook, they are showed, using real examples, how to collaborate and communicate with other faculty members, cooperating teachers and students using MS Outlook in conjunction with other communication and collaboration software.

Also in this "product-based approach, each series of workshop is accompanied by culminating products, which each participant agrees to complete and turn in before payment is made (payment is for both participating in the workshops and completing the product). Some examples of culminating products are (a) two teacher educations courses realigned to ISTE, INTASC, and NCDPI standards and with at least three (3) technology objectives included in the course objectives; and (b) three multimedia-rich lessons/presentations developed with Microsoft PowerPoint, Hyper Studio or Lectora Publisher. Each product must be reviewed first by a peer chosen by the participant for

content and standard requirements and then by two (2) TIP Coordinator and Director for overall technology quality and standard in line with the pre-established guidelines/rubric. Each finished product is turned in with a checklist prepared by to guide participants. This approach has generated growing interests among members of faculty from both the College of Art and Sciences and the School of Education. The product-based approach has become the guiding principle used for planning and delivering technology-related faculty development workshops throughout WSSU.

The Need for TIP and the Product-Based Approach

As in many other institutions, problems exist in the Teacher Education Program at WSSU, relative to technology integration and the ability of pre-service teachers to demonstrate effective use of technology to improve instruction. For example, data from the Office of Student Services in the School of Education at WSSU show that although information technology was available in K-12 classrooms where pre-service teachers did their field training, they did not routinely use technology during the field experience. This finding reflects concerns noted in both the Milken Exchange on Education Technology (1998) survey and the International Society for Technology in Education (ISTE) (1999) surveys, which also found inconsistency, nationally, between what teacher-training faculties know about technology and what they are training teachers to do in their courses. As follow-up to the ISTE's survey, Bielefeldt (2000) asked faculty members about the extent to which future teachers were being exposed to technology in their classes. The results of his surveys gathered from 416 institutions showed that the majority of faculty-members (respondents) revealed that they did not, in fact, practice or model effective technology use in their classrooms. These concerns, though national in scope,

reflect the myriad problems that faced the Teacher Education Program at WSSU. Several internal factors also led to this technology initiative and they include:

- the trend statewide and nationally in teacher shortages in K-12 schools.
- WSSU students' less-than-acceptable performance on the Praxis exam, which leads to attrition in the Teacher Education program and further exacerbates the teacher shortage.
- the local superintendent's expression of desire for the university to improve technology skills of K-12 teachers, which meant not only the teaching of technology skills but also for faculty to serve as role models so that students might see the faculty putting into practice those technical skills being taught.
- the need for greater collaboration and cooperation between the School of Education and the School of Arts and Sciences, since the subject areas in which students have most difficulty on the Praxis examination are in the School of Arts and Sciences.

Rationale for TIP

One obvious problem militating against effectively training pre-service teachers to use existing and emerging technologies is the inability of university faculty members to model advanced knowledge and skills in integrating technology into instruction and across the curriculum (Bielefeldt, 2000; ISTE, 1999; National Council for Accreditation of Teacher Education, 1997). The ISTE (1999) survey sponsored by the Milken Exchange on Education Technology found, among other things, that (a) pre-service and in-service teacher development programs have not kept pace with the rapid changes in

quality and quantity of information technology, (b) most faculty do not model the use of information technology skills in their classes, (c) distance education and computer assisted instruction affected only a small proportion of students in teacher training institutions, (d) most student teachers do not routinely use technology during field experience and do not work under master teachers and supervisors who can advise them on information technology use, and (e) the number of hours of instructional technology integrated into other courses has a moderate correlation with reported level of skills of student teachers to effectively use different technologies. The same ISTE survey found that (a) formal stand-alone information technology coursework did not correlate well with scores on items dealing with technology skills and the ability to integrate technology into teaching and (b) institutions that reported the highest levels of student technology skills and experience were not those with heavy computer course requirements, but those that made use of technology on a routine basis throughout the teacher training program.

Among several important issues identified by the ISTE (1999) survey, one in particular stands out: if we are to increase the technology preparedness of new teachers entering 21st Century learning environments, we must also increase the level of technology integration in the academic programs on our campuses. To accomplish this objective, the survey recommended, among others, that (a) technology should be integrated into other courses and SCDE (School, College, and Department of Education) activities, rather than limited to separate courses; (b) institutions should engage in technology planning that focuses not only on facilities but on the integration of technology into teaching and learning; (c) student teachers need more opportunities to apply instructional technology during field experiences under qualified supervision; (d)

faculty should be encouraged to model and integrate technology; and (e) dissemination of effective technology integration based on PK-16 needs and grounded research is essential. Other national studies make similar suggestions. The Task Force Report of the National Council for Accreditation of Teacher Education (1997) recommends focusing on faculty professional development and the reward and promotion system. These key findings have guided the conception, development, and implementation of TIP at Winston-Salem State University.

There is no doubt that the successful integration of technology into teacher education hinges on the willingness of faculty to move beyond the "basement and first-floor" technologies with which they are most familiar and into the upper levels that incorporate advanced and multifaceted information technologies. This is why TIP focused on faculty development in the utilization modeling of advanced educational technologies (across the curriculum) such as developing/authoring multimedia instruction, web-based instruction (synchronous and asynchronous), visualization, network collaboration, etc. Through increased emphasis on faculty development backed with incentives outside the traditional academic reward system, TIP has encouraged members of faculty to model technology integration. All technology instruction must be about teaching *with* technology and not *about* technology. In line with the university's motto, "enter to learn … depart to serve," TIP is enabling WSSU to train teachers who know their content very well, understand their students, and have mastery of a repertoire of effective pedagogical skills, including the use of advanced technologies to support higher level thinking and learning.

Although some faculty members were much farther along in the use of technology in their teaching and had developed Web-based courses and course supplements, most restricted their use of technology to lower level skills and applications, neglecting its use as a pedagogically powerful tool for the construction and modeling of knowledge. Very few viewed Web-based instruction as an application of a repertoire of cognitively oriented instructional strategies within a constructivist and collaborative learning environment. Even fewer moved beyond the static page to the interactive page that performs additional tasks such as querying a database, grading a test, providing feedback, and displaying real time conferences within the browser interface. Virtually none of them launched out to explore higher levels of technology uses and applications, such as visualization and modeling. Today, Technology Infusion Project and other faculty development initiatives provide intensive training and ample opportunities for faculty members to identify, develop, test, and integrate higher-level technology applications into the teacher education curriculum.

TIP Design and Activities

During the first year of the project, an invitation was extended to faculty in the Schools of Education and Arts and Sciences to register for a workshop to be conducted over several weekends to help them realign their courses with professional standards, improve teaching performance, strengthen their skills in the use of technology, and also integrate technology competencies into their various syllabi. Fifteen faculty members registered for the workshops. The end products were two redesigned and realigned teacher education courses. The redesign and realignment involved rewriting course objectives appropriately according to Blooms Taxonomy and integrating technology

competencies in line with ISTE standards. The incentives included a summer contract (in the amount of $3250.00) for realigning two courses during the 2000/2001 academic year (1st year).

During the second year, twelve faculty members who registered to participate agreed to develop two Web-assisted courses via Blackboard and FrontPage, three multimedia presentations, a Web page, a digital portfolio, and two WebQuest (Dodge, 2002) activities as the end products. Incentives for the second year (2001/2002 academic year) included a Compaq iPAQ 3650 Color Pocket PC with wireless connectivity, keyboard, and other extras, and a total stipend of $1000. Also as part of the recommendations of the project's first year evaluation report, several members of faculty and cooperating teachers participated in a 3-day technology retreat at the North Carolina Center for the Advancement of Teaching (NCCAT) in Cullowhee, NC in June 2002. The aim of the retreat was to facilitate better understanding of the ISTE standards and their *FULL* integration into teacher education courses by both faculty members and cooperating teachers. It also strengthened the collaboration and cooperative efforts already existing among the various constituencies (cooperating teachers, methods faculty members, technology experts, and Arts and Science faculty) of our teacher education program. Hands-on activities during the retreat focused on developing and using digital portfolios and authoring contents using Lectora Publishing -- a multimedia authoring software developed by Trivantis Corporation.

Prior to accepting and fully engaging in these product-based activities, faculty members – on several Fridays and Saturdays throughout the spring, summer and fall

semesters – participated in the various technology workshops, which lasted from 2 hours to several hours each day (Tables 1 and 2):

Table 1

Some Phase One/1st Year) Faculty Professional Development Workshop Topics

1st Year/Phase One Topics
Basic and Intermediate Computer Skills
Intermediate Computer Skills
Using the Macintosh Platform
Data Storage and Backup
Interactive Video Classrooms
Scanning, and Photo Editing
Spreadsheet and Graphing
Desktop Publishing
Project Management
Linear Presentation-PowerPoint
Using FrontPage and HTML
On-line Course Development
Synchronous and Asynchronous Instruction
Evaluation and Assessment – SPSS and JMP
Course Realignment and Technology Integration

Table 2

Some Phase Two/2nd Year) Faculty Professional Development Workshop Topics

2nd Year/Phase Two Topics
Developing Web Pages
Enhancing Web Pages
Developing Multimedia Presentations (Linear and Non-linear)
Creating Digital Portfolios
Digital Imaging and Scanning
Creating Digital Images with Digital Cameras and Digital Video
Streaming Media
Creating Web-assisted Courses
Developing and Using WebQuest
ISTE Standards, Collecting Evidence/Artifacts, and Developing Assessment Instruments and Rubrics
Authoring Content Using Lectora
Data Backup and storage, mapping and using LAN Drives
Using CD-Rs and CD-RWs
Enriching PowerPoint Presentations with animation, audio, and video, action buttons, hyperlinks, etc.
Uploading media files in Blackboard, etc.

Results, Lessons Learned and Recommendations

Results

The end-product model has facilitated collaboration among content areas and the full integration of technology across the teacher education curriculum at Winston Salem State University. In a forum akin to legal education's "moot court," pre-service teachers at WSSU must demonstrate proficiency in using advanced technologies to support instruction. They are required to develop "digital portfolios" and to present a lesson before a panel of their peers, teachers, and faculty members who assess their work. The digital/live portfolio doubles as a recruitment forum for our public school partners and an evaluation of the effectiveness of the Teacher Education Program's efforts.

Students have benefited from improved technology skills among their faculty:

- Teaching and learning are more exciting.
- Information is more current.
- Communication is enhanced among students and between students and faculty.
- Access to course information and materials is improved.
- Reinforcement of what is taught in class is improved because students have ready access to course notes
- Students who are absent from class have online access to course materials.
- Quality of research papers, essays, etc., is improved because of access to the Internet and other online sources.
- Students learn how to improve their own teaching skills so they become more effective classroom teachers.

- Evaluation of students' work and feedback about their work are more prompt.

Two years of Evaluation data are beginning to paint a picture of where we are. The external evaluation from the first year was positive. Part of the results noted that:

> In sum, five major themes emerged from both the interviews and mail surveys: 1) The technological infrastructure of the University is a limiting factor in PT3 efforts to infuse instructional technology in the classroom and faculty development; 2) The primary reason for taking the workshop was skills and knowledge acquisition; 3) The structure and organization of the workshops contributed much to its overall success; 4) Participants cited evidence of enhanced student performance as an outcome of workshop participation; and 5) The development of new networks, including interdisciplinary ones, was a major outcome of workshop. (Pearson, 2002, February 12, Pi)

We began to see some signs of change in faculty efficacy:

> One participant said that: "What I had been doing was so rudimentary compared to what was required to be done..." This also speaks to the high performance set by the PI and PD. Another remarked that: "I have seen people doing things that they were not doing before." (Pearson, 2002, February 12, p. 1)

We also saw the impact of our emphasis on curriculum design and assessment.

> The workshop enhanced some participants' ability to more clearly articulate course requirements and relate them to performance objectives. One respondent noted that Prior to the workshop, I could not write instructional or performance objectives according to Bloom's Taxonomy. Another stated, "I can develop a rubric which clearly spells out expectations for a culminating project, the different levels of performance, and the criteria assessing the product at each level. Still another found that I had to think about everything that I am asking students to do." "If it doesn't relate to standards, then I am leaving them out." "I feel better about requiring them to do things with technology because I feel better about my ability to do it myself and show them how." (Pearson, 2002, February 12, p. 5)

Possibly the most important unintended consequence that was reported in first year evaluation was the networks that were developed among faculty who participated in the workshop.

> A major benefit from participating in the workshop was the opportunity to become part of new networks: "I am now part of network of people who are interested in multimedia technologies. Had I not been part of the PT3 workshop, I probably wouldn't be a part of that (network)." Another major benefit was

> forming interdisciplinary collaborative groups: "Before the workshop, we really didn't have much contact with the people in Education. Now, we (math/science faculty) are planning to form a program so that we can prepare science teachers." (Pearson, 2002, February 12, p. 5)

Some of the issues of concern that emerged from the first year evaluation were designing staff development for diverse ability groups and diverse learning styles, meeting the needs of the disabled in the design of multimedia material, providing adequate equipment for faculty so that they could practice and implement their new skills in their offices and classrooms (Pearson, 2002, February 12).

In addition, the TIP's professional development helped produce a very positive unintended consequence. Although our performance rubrics focused on the redesign of existing programs of study, faculty members took the skills and knowledge that they had acquired and developed web-assisted modules of instruction for lateral entry teachers in Middle Grades Education (MGE). The modules integrated the learning outcomes of the professional core and the MGE outcomes into cohesive units that required the students to produce electronic portfolios of their work.

During the second year of the project, we emphasized small group instruction and tutorials to support diverse ability groups and learning styles and we provided authoring software in our ad hoc computer laboratory for faculty use. The evaluation report for the second year summarized the program participants' key issues.

> Finally, six major themes emerge from the interviews: 1) The University's technological infrastructure (as measured by the equipment provided to professors in their offices and in the classrooms) is a limiting factor in the Technology Infusion Project's efforts to infuse instructional technology at the University; 2) The primary reasons for taking the workshops are "skill development" and "knowledge acquisition"; 3) Participants' view the workload (expectations) as demanding; 4) Participants are either unsure of or doubtful about the level of support for the TIP initiative from the University's most senior administrators; 5) The development of new networks, both interdisciplinary and with the teaching

> and learning center, are a worthwhile outcome of the workshops; and 6) The quality and accessibility of technical assistance (support) are significant factors in participants' skills and knowledge acquisition. (Pearson, 2002, May 16, p. 2)

Visit http://tip.wssu.edu/Tip/Result/2yrlinks.htm to access the web site of participating members of faculty where several of their products are displayed. Also, access students' products (digital portfolios) at http://tip.wssu.edu/stuproj/student-product.htm.

Lessons Learned

- A tremendous amount of preparation time is required to develop technology skills.
- Some of the tasks may become quite complex for many and would require one-on-one assistance.
- Varied levels of competency among faculty means that sometimes the workshops will be too slowly for those with advanced skills, and at other times too fast for those who were novices.
- The workshops are a great avenue for networking with colleagues within and across disciplines.
- A high level of intrinsic motivation is required, as well as a desire to be proactive in strengthening one's courses and teaching.
- Any extrinsic rewards must be relevant to the work performed.
- Every effort should be made to reinforce and nurture intrinsic motivation.

Recommendations

- Share the training model with K-12 schools.

- Assist K-12 teachers in improving their technology skills.
- Involve other disciplines.
- Provide some tangible incentives.
- Get administrative endorsement of the project as a tool for improving teaching and learning.
- Seek recognition from deans and chairs for course development as an important criterion for annual performance evaluations.
- Develop online assessments for course and programs that tie the learning outcomes into the NCATE assessment process.

Appendices

1. Sample Matrix of "Learner Outcomes
2. Sample Alignment of Instructional Objectives with Standards (ISTE, NCATE, INTASC, NCDPI, PRAXIS)
3. Sample Rubrics from Realignment 1, 2
4. Sample Workshop Evaluation Instruments (one, two, three, four)
5. Typical Workshop Schedule (Fall 2001) and Activity/End-Product Descriptions
6. Typical Workshop Rubrics: Phase One, Phase Two, and Retreat
7. Retreat Objectives and Outcomes/End-Product Descriptions

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Appendix 1

AN EXAMPLE OF MATRIX OF LEARNER OUTCOMES (from a course entitled "Teaching in A Culturally Diverse Society")

Learning Outcomes	Instructional Objectives	Teaching Strategies and Learning Resources	Outcome Assessment
Demonstrate knowledge of the influence of significant political, economic, and socio-cultural forces on American education	1. Define diversity and the various components of diversity in American society and schools 2. Explain what is meant by the "changing cultural landscape" 3. Describe and give examples of demographic, social, and cultural changes that are responsible for the growing importance of diversity 4. Contrast "assimilation: and "pluralism" and give examples of each 5. List some of the characteristics of diversity 6. List and explain diversity myths 7. Define "diversity consciousness" 8. Define "cultural competence" 9. Define "diversity education"	**Teaching Strategies** ▪ Instructor's presentation ▪ PowerPoint presentation ▪ Overhead transparencies ▪ Class Discussion ▪ Websites **Learning Resources** • "Diversity: An Overview" (Textbook chapter 1) • Case study • Newspapers and periodicals, television and mass media	➢ Assignments ➢ Teacher-constructed test ➢ Research paper

Appendix 2

Alignment of Performance Objectives/Outcomes with NCATE, INTASC, ISTE, and NCDPI Standards

Instructional Objectives	NCATE	INTASC	*ISTE*	NCDPI	PRAXIS
1. Articulate the various family systems.	1, 3b, 5c,	2, 10	VI-B	1.12	I
2. Show how home-school collaboration benefits students.	1, 3b, 5c, 5d	10	VI-B, VI-C	1.3, 1.5, 1.7, 1,9, 1.12, 3.9, 4.2	I
3. Demonstrate an understanding of research on brain development and attachment.	1	2	VI-B	1.2	I, II
4. Exhibit an understanding of various theories about intellectual development.	1	2	VI-B	1.5	I
5. Distinguish between developmental continuity and discontinuity.	1	2, 10	II-C III-C	1.7	I
6. Articulate essential elements from the history of parent education and its impact on contemporary education.	3b, 3c	10	VI-B	1.12	II

Appendix 3

Rubric for a Group Project Presentation

Criteria	Excellent (15 points)	Average (11 points)	Poor (7 points)
Content	Relates to topic; knowledgeable; geared to audience; engages audience, raises or invites questions, and stimulates curiosity; well-informed, informative; valuable information; factual	Relates topic; informative; valuable information; minimally engages audience, raises or invites questions, and stimulates curiosity; factual	Topic unrelated; information of little or no value; fails to engage audience, raise or invite questions, and stimulate curiosity; not factual
Presentation Style	Comprehensible; met needs of audience; voice, gestures, eye contact, grammar were strong; group members are appropriately dressed; members answer audience questions; end with effective final presentation; members not dependent on notes	Comprehensible most of the time; voice, gestures, eye contact, and grammar were adequate; group members not dressed appropriately; members answer some audience questions; end with mediocre final presentation; members depend on notes somewhat	Unclear organization; weak vocal qualities, gestures, eye contact, and grammar during presentation; group members' attire distracts from presentation; members do not answer audience questions; ends with no final presentation; members depend almost fully on notes
Group Dynamics	Entire group was present; role of each member was clear and essential to the project; input was effective; group members were cooperative	Entire group was present; each member gave input; each member was cooperative	Group member(s) absent; input given by one or a few members; group members were uncooperative
Visual Aids and Equipment	Appropriate to presentation; effective; suitable; and educational	Understandable; some reference made to visual aids during presentation	Unreadable; no reference made to visual aids during presentation
Language/Mechanics	Follows standard rules of grammar, no grammar or spelling errors, double spaced, easy to read	Misspellings, poor grammar in several places, not double spaced, somewhat difficult to read	Numerous misspellings and poor grammar throughout, not double spaced, difficult to read
Internet Sources	Used more than three credible sites/sources	Used three credible sites/sources	Used fewer than three sites/sources; sources not credible
Additional Research Materials	Used more than five credible sources	Used five credible sources	Used fewer than five sources; sources not credible
Acknowledgement of Sources	Referred to all sources; compliance with APA style; bibliography available	Referred to 75% of sources; complied with APA style somewhat; bibliography available	Referred to less than 75% of sources, not in compliance with APA style; no bibliography
Technology/Technical Aspects (especially PowerPoint)	Good instructional design principle is evident (especially in any sound effects and transitions); content readable (large font size, legible colors); uses multimedia (e.g., sound and video); uses several graphics; graphics support or elaborate on content	Uses small number of graphics; good transition between slides; slides show bullet points, not the entire text of the presentation; content is readable; graphics support or elaborate on content reasonably well	Content is not very readable; uses small number of slides; text has grammar or spelling errors; graphics distract from or do not support or elaborate on content

Rubric for a NOTEBOOK (10 points of final grade)

Criteria	Excellent (10 points)	Average (7 points)	Poor (5 points or less)
Content	Includes: • class notes. • notes from student readings. • handouts from class. • fingering charts and diagrams. • photographs of instrumental families and artists. • List of at least ten (10) related website addresses (i.e., manufactures, professional organizations associated with each instrumental family which could include ClarinetWork, Mid-west Clinic, World Saxophone Congress, etc. • List of graded solos and study materials for each instrumental family. • Instrument examples (i.e., professional, intermediate, beginner models). • List of current and famous recordings for each instrument. • List of well known soloists for each instrument. • Other items of interest to you.	• Not all elements outlined for ***Excellent*** are included. • More than two of the items listed for ***Excellent*** are missing. • Class notes, handouts, list of related websites, list of graded solos and study materials; instrument examples and list of current recordings ***must*** be present.	• More than 3 of the elements listed for ***Excellent*** are missing. • Class notes, handouts, list of related websites, list of graded solos and study materials; instrument examples and list of current recordings ***must*** be present.

(Notebook evaluation rubric continued)

Criteria	Excellent (10 points)	Average (7 points)	Poor (5 points or less)
Organization	Includes: • Table of contents. • A brief preface or statement of purpose. • Main body of information. • List of references at the end.	• Not all parts of the organization are included.	More than two parts of the organization are missing.
Language Mechanics	Includes: • Text is easy to read. • There are no grammatical or spelling errors.	• Text is difficult to read. • There is more than one grammatical or spelling error.	There are more than three (3) grammatical errors.
Presentation	Includes: • Three ring binder. • Subject dividers for each family (i.e., flute, clarinet, saxophone, double reeds. • All text is neatly typed and doubled spaced. • Margins are one inch on all sides, and top and bottom. • Page numbers are used. • Student name appears on the front cover. • Course number and title appear on front cover.	• Not all elements for Excellent are present. • In non approved binder • Not all families are separated and labeled by dividers. • Typing is inconsistent throughout the notebook. • Pages are not numbered in a logical sequence.	• Handwritten corrections are mixed in with typed text. • Text not doubled spaced. • White out corrections are messy. • Student name, course number and name do not appear on the cover.

Appendix 4

Evaluation

Integration of Advanced Technologies in Teacher Education Courses **(11/02, 03, 09, 10, 16, & 17/2001)**

Dear Colleague: **Name:** _____ **Date:** __/__/02

Kindly complete this evaluation of the workshop you attended on November 2nd through November 17th, 2001, titled "Integration of Advanced Technologies in Teacher Education Courses" and the activities you are currently engaged in.

Directions:
On the Likert-type scale below (1 = lowest and 5 = highest), underline or circle the number indicating your ability to perform the task represented in each statement, prior to the workshop (top line) and after the workshop (bottom line).

You:	*Prior/After*	*Ratings*
Use CD-Rs and CD-RWs for creating electronic portfolios and to backup data on my computer	Prior to the Workshop	1 2 3 4 5
	After the Workshop	1 2 3 4 5
Develop and incorporate WebQuest activities into courses	Prior to the Workshop	1 2 3 4 5
	After the Workshop	1 2 3 4 5
Encourage teacher education students to use WebQuest as a method of teaching and learning	Prior to the Workshop	1 2 3 4 5
	After the Workshop	1 2 3 4 5
Create a functioning personal and/or course Web site/page on WSSU's server ("X" drive) using FrontPage 2000	Prior to the Workshop	1 2 3 4 5
	After the Workshop	1 2 3 4 5
Place/upload course documents such as syllabus, assignments, URLs, assistance/help sites, etc (both as text file and as an HTML documents) to your own web page where it can be accessed by students	Prior to the Workshop	1 2 3 4 5
	After the Workshop	1 2 3 4 5
Integrate technology-related activities into your course objectives and into students' assignments	Prior to the Workshop	1 2 3 4 5
	After the Workshop	1 2 3 4 5
Create PowerPoint lessons enhanced with multimedia (audio, video, graphics/pictures/clip arts, action buttons, URLs, charts, text, etc.)	Prior to the Workshop	1 2 3 4 5
	After the Workshop	1 2 3 4 5
Develop, and manage multimedia lessons (via PowerPoint) and other instructional materials/resources on both Web and Blackboard	Prior to the Workshop	1 2 3 4 5
	After the Workshop	1 2 3 4 5
Use the web to communicate and assist students in your courses	Prior to the Workshop	1 2 3 4 5
	After the Workshop	1 2 3 4 5
Overall, create and manage at least 2 web assisted courses	Prior to the Workshop	1 2 3 4 5
	After the Workshop	1 2 3 4 5
Overall, create a Web-assisted course	Prior to the Workshop	1 2 3 4 5
	After the Workshop	1 2 3 4 5

Part B

Do you have any additional suggestions or comments regarding the workshop and/or the activities you are engaged in?

_____

_____

_____

_____

_____

_____

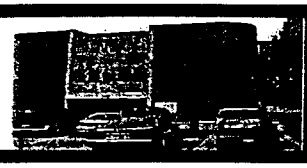
Thank you for your assistance and cooperation

Please return your completed copy (ASAP) to Madu Ireh via e-mail, fax, or campus mail at irehm@wssu.edu , 750 2375 (fax), or CB 19360 (campus box).

Appendix 5

WINSTON SALEM STATE UNIVERSITY

SCHOOL OF EDUCATION



Modeling Advanced Technology Integrating In Teacher Education

Friday October 26th, 2001

10:00	-	10:30	Overview of 1st year activities, products, contracts, evaluations, etc.
10:30	-	11:30	Details of activities, workshops, products, resources, rewards, timeline, contracts, etc.
11:30	-	12:00	Distribution of necessary materials/resources, etc.

Saturday October 27th, 2001: (9:00 AM – 1PM) (Lunch will be served)
Workshop: Details to be announced later

Friday November 2nd, 2001: (10: 00 AM – 2:00 PM)
Open Lab/Individual Sessions in EDUFACLAB, 235 Anderson Center.
Saturday November 3rd, 2001: (8:00 AM – 3:00 PM) (Breakfast & Lunch will be served)
Workshop: Details to be announced later

Friday November 9th, 2001: (10:00 AM – 2:00 PM)
Open Lab/Individual Sessions in EDUFACLAB, 235 Anderson Center.
Saturday November 10th, 2001 (8:00 AM – 3:00 PM) (Breakfast & Lunch will be served)
Workshop: Details to be announced later

Friday November 16th, 2001: (10: 00 AM – 2:00 PM)
Open Lab/Individual Sessions in EDUFACLAB, 235 Anderson Center.
Saturday November 17th, 2001: (9:00 AM – 1:00 PM) (Special lunch will be served)
Workshop: Details to be announced later

Sponsored by PT3 grant, WSSU and NC Catalyst grant, UNC-GA.

Appendix 6

Rubric/Checklist for Realigned Course Syllabi (TIP)

Course Numbers 1. _____ 2. _____ 3. _____
Date Submitted: ____ / ____ / 2001 Name of Faculty: _____, Ext. _____

S/#	Description of Evidence	*Yes*	*No*
1	Attended the workshop on Realigning and Infusing Technology into Teacher Education Courses (5/31, 6/01, & 6/02, 2001).		
2	Instructional/performance objectives are sufficient in scope and in sequence		
3	Instructional/performance objectives contain appropriate performance action verbs according to Bloom's taxonomy (middle to higher levels)		
4	There is a table showing the alignment of all instructional objectives with four (4) standards (NCATE/INTASC, ISTE, NCDPI, and my content area Professional Organization Standards [such as NMSA--National Middle School Association - for middle grades, NCTM—National Council of Teachers of Mathematics – for mathematics, etc.])		
5	There is an outline all necessary course activities (including assignments). Assignments are sequentially organized and their completion dates (if known) indicated on course activities calendar		
6	There is a table showing the alignment of all course activities (by days, weeks, etc.), assignments/major projects, tests, etc with the instructional objectives		
7	Major student products such as projects, portfolios, term papers, etc are specified for performance-based assessment		
8	The rubric(s) for all major culminating projects/products/assignments are clearly specified		
9	Align instructional objectives with the following standards: ISTE, NCATE/INTASC, NCDPI, and the appropriate professional organization standards, following the examples provided at the workshop		
10	Instructional objectives address at least three (3) ISTE performance indicators and/or NCDPI Advanced Technology Competencies		
11	The rewritten and realigned syllabi indicate how technology is integrated into both teaching and learning (via activities, assignments, requirements, etc.)		
12	The realigned syllabus was reviewed by, at least, one of my colleagues who attended the realignment workshop		
13	The two (2) syllabi I have realigned are those of courses offered in either the School of Education or the School of Arts and Sciences and taken by majority of teacher education students at WSSU in fulfillment of either graduation or certification requirements		
14	Each Syllabus (the whole document, not just parts of it) has been placed on the Web/Blackboard for access by students; the URL for each syllabus is included in the syllabus.		
15	I have forwarded (1) a hard copy of the old syllabi, and (2) both the electronic and hard copy of the realigned syllabi to TIP Coordinator		

Appendix 7

Technology Retreat – NETS/ISTE Standards and Developing Digital Portfolios

(Sponsored by the US Department. of Education via TIP & NC Catalyst (PT3 grants), School of Education, Winston Salem State University)

at the

North Carolina Center for the Advancement of Teaching (NCCAT)

Cullowhee, NC (June 6-8, 2002)

Objectives

Upon completing the technology retreat/workshop, participants will be able to:

1. using Lectora, create and publish, at least, a 5-page multimedia content, which includes audio, video, graphics/pictures/clip arts, animations, action buttons, URLs, charts, text, etc.
2. Develop a WebQuest suitable for instructional use in a K-12 Classroom.
3. Using the NETS/ISTE technology standards and profiles for teachers conduct a self-assessment of technology competencies/skills.
4. Any other.

Anticipated Results:

It is expected that every participants will complete the following:

1. a self assessment of technology skills relative to NETS/ISTE standards,
2. a review, in groups, of the standards and profiles of technology competencies for teachers
3. a WebQuest for use in a K-12 classroom (perhaps in teams)
4. a 5-page multimedia content/digital portfolio.

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Author(s): Ireh, Maduakolam & Bell, Edwin	
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Signature: [signature]	Printed Name/Position/Title: Maduakolam Ireh, Ph.D. Techn. Dir/PT3 Coordinator
Organization/Address: School of Education 254 Anderson Ctr., CB 19360 Winston Salem State University Winston Salem, NC 27110	Telephone: (336) 750 2691 / Fax: (336) 750 2375 E-mail Address: irehm@wssu.edu / Date: 7/31/2002

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