BUILDING TEAMS AND TOOLS FOR TEACHING (BT3): HIGHER EDUCATION AND K-12 WORKING TOGETHER TO IMPROVE TEACHING AND LEARNING

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Building Teams and Tools for Teachers (BT3), a 2001 PT3 Grant, actively promotes reform of university teacher preparation programs by focusing on preparing tomorrow's teachers to use technology in the classroom. BT3 has successfully trained more than 500 teachers, who have reached more than 10,000 K-12 students.

Building Teams and Tools for Teachers (BT3), a 2001 Preparing Tomorrow's Teachers to Use Technology Grant. BT3 actively promotes reform of university teacher preparation programs by focusing on preparing tomorrow's teachers to use technology in the classroom. The program is guided by three primary objectives:

1) providing pre-service and inservice teachers as well as university faculty with learning opportunities that allow them to effectively incorporate technology in their teaching while successfully meeting Texas State Board for Educator Certification (SBEC) and Texas Essential Knowledge and Skills (TEKS) standards;

2) to promote collaboration between K-12 schools and university-based teacher preparation programs, and among teacher preparation programs and other academic disciplines;

3) incorporating this model of collaboration and the pedagogically sound integration of technology into teacher preparation curricula.

The BT3 consortium is made up of three Texas higher education institutions: St. Edward's University, University of the Incarnate Word and Concordia University- Austin. Additionally, the partnership includes four school districts, 59 individual K-12 schools in the Austin, San Antonio, Dallas, and Houston areas, four independent school districts, and two not-for-profit institutions. Partnering institutions are represented on the BT3 advisory board, which meets monthly. The board is responsible for helping guide the program, making budget decisions, collaborating with others about technology integration and classroom teaching, disseminating information about the project, and providing support services such as grant writing, the delivery of instruction, and contributing resources to support program efforts.

Originally, the BT3 project consisted of a 60-hour summer institute, within which pre-service teachers, inservice teachers, and university faculty worked on teams to create technology infused lessons to be taught in the classroom. BT3 has adopted the constructivist Active Learning with Technology (ALT) curriculum of the Southwest Educational Development Laboratory (SEDL). The ALT curriculum is unique in that it trains teachers in research-based strategies that emphasize student-centered, real-life learning experiences for K-12 students and ways in which technology can be used as a tool to support these practices. Participants, K-12 teachers, pre-service teachers, and university faculty work through real-life, technology-infused, problem-solving scenarios while learning valuable teaching strategies that can be adapted to fit any classroom. While the curriculum is content driven, teachers end up gaining knowledge in the use of and how to integrate various technology into their teaching. During the summer training,

pre-service (student) teachers are paired with K-12 inservice teachers who serve as their mentors in the upcoming fall or spring student teaching experience

In recruiting inservice teachers to participate in the 60-hour summer institute, the demand for technology integration training initially exceeded the program's capabilities. Within the first year alone, more than 150 K-12 teachers showed an interest in participating as mentors in the program's technology integration training opportunities. The following BT3 training opportunities have been developed and offered:

1) educational technology workshops;

2) instructional technology workshops;

3) Active Learning with Technology training;

4) online technology integration course; and

5) the University Technology Grant Program.

Educational technology workshops provide pre-service, K-12 educators, and university faculty members with a two- or four-hour training workshop focusing on a topic of their interest. Through survey results, topics are derived, appropriate trainers are then hired and instruction is delivered. Workshops are not technology specific; rather they are pedagogy rich, content based, with supplementary technology resources infused. Educational Technology Workshops topics include: KidPix Studio Software, Inspiration and PowerPoint, Digital Still Camera/Photoshop, and eportfolio, among others. These Workshops are not technology specific; rather they focus on how to implement best practices in teaching and learning with technology resources infused.

Instructional technology workshops provide K-12 inservice teachers and higher education faculty with intensive training on various technology applications and hardware mediums. Topics range from operating systems to HTML.

Active Learning with Technology (ALT) workshops prepare K-12 inservice teachers to deliver training to other faculty and to integrate technology into curriculum while creating constructivist lessons. In contrast to the Educational Technology workshops, the Active Learning with Technology workshops (ALT) focus on best practices in teaching and learning. The ALT training uses the Active Learning with Technology Curriculum that was developed by the Southwest Educational Development Laboratory (SEDL). The SEDL curriculum emphasizes student-centered, real-life learning experiences for K-12 students and ways in which technology can be used to support these practices. ALT participants, who are all K-12 teachers, work through real-life, technology-infused, problem-solving scenarios while learning valuable teaching strategies that can be adapted to fit any classroom. This three-day workshop is offered when funding is available. Generally, participants receive a modest stipend. All attendees are prepared to serve as technology trainers so that they may share their new knowledge with others at their school.

Online technology integration courses offer pre-service and K-12 educators Continuing Education Units (CEUs), which can be used to maintain their teacher certification and to update their understanding of technology integration while creating curriculum materials. The online technology integration courses are self-paced and focus on a number of topics. These courses provide educators with a means of earning 40 or 80 CEUs for successfully completing a four or six week course. Topics include, but are not limited to:

- Using Computers as Instructional and Student Learning Tools
- Integrating Technology into the K-12 Classroom
- Web Page Development for Teachers
- Creating and Using Multimedia Presentations

- Troubleshooting the Technology

Additionally, BT3 partners have the option of participating in the St. Edward's University Technology Grant Program (TGP). TGP provides K-12 institutions with access to the previously operated equipment on the St. Edward's University campus. Trainers are available to travel to individual school sites to deliver technology integration training and to assist by installing and updating the equipment granted by the program. Through the St. Edward's University Technology Grant Program, K-12 teachers, administrators, and technology coordinators can take part in the various BT3 technology integration training opportunities. Administrators can request that specific training topics be offered at their school site or at St. Edward's University at no charge.

Over the past three years, BT3 has trained more than 500 teachers, who have reached more than 10,000 K-12 students. With the assistance of external sponsors and the dedication of the BT3 partners, the program has been sustained and will live on for years to come.

The Building Teams and Tools for Teaching (BT3) Program have been sponsored by the following organizations: The United States Department of Education, Advanced Micro Devices, Southwestern Bell Communications, State Farm, Telecommunications Infrastructure Fund Board, Engaging Latino Communities for Education, Brown Foundation of Houston, Powell Foundation, International Business Machines, and Bank of America. Sponsors have provided financial support and equipment as well as instructional assistance.

The BT3 partners have assisted in program development, implementation and dissemination and in the development of new partnerships between BT3 and other community organizations. Each of the higher education institutions have mandated participation for its pre-service teachers and have tied participation to their teacher preparation curricula. Concordia

University at Austin and the University of the Incarnate Word have created a required course that encompasses the BT3 curriculum and participation in the summer institute. St. Edward's University has tied participation in BT3 to the student teaching experience. Students receive part of their student teaching grade based on their BT3 performance. St. Edward's is currently in the process of creating a three credit hour college course similar to that already in place at Concordia and Incarnate Word.

In addition, three of the four participating school districts have agreed to provide stipends to each inservice teacher who participates in the 60-hour BT3 summer institute. Additionally, a university coordinator has been trained at each participating higher education institution and will continue to coordinate BT3 at their institution in the future. Finally, St. Edward's University has fully institutionalized the position of BT3/Field Placement Director. This person will continue to provide the support needed to ensure that the program goes on indefinitely.

Evaluation

The BT3 project has been a success based on participation and sustainability alone. However, the project has gone well beyond these measures of success, employing a rigorous evaluation methodology, both formative and summative, to measure the participants' learning outcomes. This methodology enables us to report on specific learning outcomes, as well as to document the many lessons we have learned throughout the process.

Participant learning outcomes for the project are defined by the ability of: inservice and pre-service teachers, and university faculty to expand their understanding the role of technology in education; and the ability of the student teachers to successfully apply the knowledge they gained in the classroom. The third year of the project has not yet ended. Therefore, the data

reported here reflect the outcomes of the first and second years of the project (for a detailed description of the methodology and statistical analyses see, Zúñiga 2003).

Two techniques are being used to measure technological confidence and attitudes toward the educational uses of technology. First, the university faculty, inservice and pre-service teachers are asked to complete a self-assessment of their technology skills at the beginning of the summer workshops and again at the end of the follow-up sessions during the student teaching semester. A self-assessment was chosen, rather than an observation of actual technology skills for two reasons. First, the goal of the BT3 program was to help teachers use technology to support effective instructional strategies rather than to teach them to use technology. The SEDL Curriculum does not specifically "teach" technology skills. Instead, it introduces participants to the use of various low threshold technological applications through active engagement in constructivist instructional exercises. The assumption is that participants will increase their technological skills in the process of becoming more engaged in using technology to improve instructional strategies and engage students. The outcomes measures for pre-service teachers discussed later in this article tend to bear out this assumption.

Second, some studies indicate that the participant's confidence in using technology is as important, and perhaps more important, than their actual skill at using specific technologies. Hackbarth and his colleagues (2003) argue strategies and activities that minimize computer anxiety and increase computer playfulness increase the perceived ease of use of technology. They go on to say that perceived ease of use has been shown to play a critical role in determining a user's decision to use technology. Therefore, the BT3 participant's perception of their abilities is as important as their actual level of ability in encouraging more effective use of technology in the classroom.

One-hundred percent of the BT3 workshop participants responded to the skills self-assessment at the beginning of the year one workshops. The pre-service teachers indicated more experience with technology use than either university faculty or inservice teachers. Inservice teachers saw themselves as less experienced overall than either of the other two groups. All three groups said they had more experience with general computer skills such as "us[ing] the mouse" or "copy[ing] files from one directory/folder to another" than with the use of other technologies. One big difference between the pre-service teachers, university faculty and inservice teachers was the former group's high level of experience with presentation and database skills. The pre-service teachers rated themselves as very experienced with these skills, while both the university faculty and inservice teachers rated themselves as only somewhat experienced. Pre-service teachers also had more experience with E-mail communication than the university faculty or the inservice teachers.

In the second year the overall technology skills of the pre-service and inservice teachers were slightly higher than in year one, but these differences were not statistically significant. However, 11 percent of the mentor teachers were repeating their BT3 experience. The overall skill level they reported was not only significantly higher than that of the incoming mentor teachers, but also exceeded that of the current crop of pre-service teachers. This indicates that the BT3 experience did, in fact, increase the technology comfort and sophistication level of the participating mentor teachers.

Interestingly, each group had significant increases in their level of technology skills. Self-ratings of technology proficiency for the pre-service, inservice and university faculty increased as a group in all eight technology-skill areas. Inservice teachers showed the most gains in

perception of their overall technological sophistication increasing from a ranking of 3.5 on a 5 point scale at the beginning of the BT3 experience to 4.1 at the end.

BT3 participants were also asked about their experience using 13 technologies in instruction. Pre-service teachers were asked about their experience using these technologies in their university classes; while faculty and inservice teachers were asked about their use of these technologies in their own teaching. During the student teaching semester, pre-service teachers are required to participate in two Saturday follow-up sessions. During each follow-up, pre-service teachers learn to videotape and edit video. The final BT3 project is for each pre-service teacher to videotape a technology infused lesson that they teach during student teaching. They are then required to edit their video, create an annotation and storyboard, finalize a unit of technology integrated lesson plans, and present their projects to program staff, university faculty, and other pre-service teachers. The final products are then evaluated by nationally renowned technology integration experts from around the country.

A majority of the pre-service teachers at the beginning of the BT3 experience said they have used computers for any purpose (58.1 percent); word processing (58.2 percent); World Wide Web browsers (55.8 percent); and E-mail (55.8 percent) to a great or very great extent in their college classes and 44 percent said they had used presentation programs. Very few said this about the other technologies such as spreadsheets, databases, concept mapping programs, drawing programs, digital cameras, digital video and scanners. After the end of their BT3 experience the perception of their computer use in instructional settings changed significantly. One hundred percent of the same group of pre-service teachers at the end of their student teaching semester said they used word processing and E-mail in their college classes and nearly 100 percent said they used computers in general. Moreover, almost 90 percent said they used

World Wide Web browsers and two-thirds said they used presentation programs. In fact, the use of technologies in college classes increased across the board.

While just over 70 percent of inservice teachers said they used computers in their teaching at the beginning of the BT3 experience, more than 90 percent of the same group said this at the end of their BT3 experience. They also reported increases in the use of specific technologies in teaching such as word-processing, presentation programs, World Wide Web browsers, E-mail, Digital cameras and video, and scanners.

At the beginning of the BT3 process, the university faculty members were far more likely than inservice teachers to say they used technology in their teaching. At the beginning of the process, 90 percent of the university faculty said they used computers in their teaching; and 90 percent said they used word-processing and 100 percent said they used E-mail. The diversity of technological applications, rather than overall use, increased more for faculty between the beginning and the end of the process. University faculty members were more likely at the end of their BT3 experience to say they are using spreadsheets, databases, presentation programs, World Wide Web browsers, concept mapping programs (such as *Inspiration*), and digital video equipment for instructional purposes.

These comparisons are interesting but do not by themselves prove that the changes are related to participation in BT3. To better understand how BT3 is influencing these changes, all workshop participants also are asked to complete conceptual maps (see for example: Zelik, 2004) describing their perception of themselves as a teacher and their understanding of how technology can be used in instruction. Concept maps are completed at four points in time: at the beginning of the summer workshops, at the mid-point of the summer workshops, at the end of the summer workshops and at the end of the student teaching semester.

Themes from the first administration of the maps to the last showed interesting changes in the attitudes and perceptions of the participants. Themes from the first administration of the maps on their *impressions of how technology can be used in teaching and learning* can be placed into three main groupings.

- Lists of software or hardware applications such as word-processing, spreadsheets or PowerPoint (32 percent).
- Technology as a visual aid (20 percent) and/or technology as a way to engage students by combining entertainment with teaching (18 percent).
- Technology as an information resource (14 percent)

Participant responses to this question evolved over the course of the workshops and the student teaching semester. Not only did respondents list more uses of technology but the way they expressed them changed. While they did not cross-out their lists of software and hardware applications they added things, such as:

- "Technology should always be used to support and enhance rather than lead instruction," and "The ways technology can be used are only limited by what is available (14 percent)."
- They also were more likely to add comments about the use of technology to support diverse learning styles and about technology as a motivator and facilitator of discovery and motivator for active learning (38 percent).

These perceptual changes are important. One university faculty member, who began by being very suspect of the BT3 process, ended the process by saying on his final map that he now realized "…learning is more effective than teaching." Other comments on the final maps that

indicate increasing sophistication in their understanding of how technology can be used effectively in instruction include:

- "[technology] can enhance any lesson"

  Pre-service teacher

- "[I am] willing to try technology at a higher level of implementation"

  Inservice teacher

- "technology should be used throughout the curriculum, not separated"

  Inservice teacher

Another measure of the outcomes of the project was the ability of the pre-service teachers to implement what they learned in the classroom. Each student teacher/mentor teacher pair was required to submit their BT3 unit plan, a 20-30 minute edited video demonstrating the teaching of their BT3 unit, and a critical self-reflection on the implementation of the unit. These packets were then reviewed by a group of national experts in teaching and learning with technology.

The reviewers represented directors of other PT3 projects, faculty in other teacher education programs, instructional developers and professional development staff from other universities and from the national R-TECs (Regional Technology in Education Consortia program). Seven reviewers participated in year one and 10 in years two and three. Reviewers were given a five-part rubric, developed for the BT3 program, that measures the pre-service teacher's mastery of unit plan development, technology infusion, use of constructivist learning strategies, classroom implementation, and assessment of student learning.

Thirty-nine pre-service packets were reviewed for 2002-03. The packets were rated using three categories "work in progress," "approaching mastery," or "mastery." None of the pre-service teacher's submissions were rated "work in progress." One-third (33.3 percent) of

the pre-service teachers were rated at the "Mastery" level and the remaining two-thirds (66.6 percent) were rated as "Approaching Mastery."

In the second year of the project the "mastery" category was divided into "second level mastery" and "first level mastery" to allow for more discrimination among ratings. The scoring also was made more rigorous, increasing the likelihood that participants would fall into the "work in progress" category. Ten percent of the reviewed packets achieved a rating of "First Level Mastery" and 46 percent achieved a rating of "Second Level Mastery," 24 percent were rated "Approaching Mastery," and the remaining 20 percent "Work in Progress." Interestingly when we look at the breakdowns by rubric area these same students rate higher on average in technology infusion than in overall proficiency. Twenty-six percent of these same students achieved ratings of "First Level Mastery and 40 percent achieved "Second Level Mastery" in the area of Technology Infusion.

Aside from the technical challenges of producing and editing the videos, the single greatest challenge was helping the pre-service teachers to understand how to present their work in a way that demonstrates the implementation of their lesson. In year one the quality of the video productions varied dramatically from videos that merely panned the classroom to sophisticated story boards presenting the pre-service teacher's facilitation and the independent work of their students. One of the best videos produced was by a pre-service teacher in a middle school Art History class. This pre-service teacher organized her video so that it illustrated the instructions given to the students, the process they went through to research an artist and replicate a piece of his/her work, and her student's PowerPoint presentations of their final product. To her credit, this pre-service teacher was offered a position after graduation at the school in which she was student teaching.

In the second year of the grant workshops more time was taken helping the pre-service teachers develop a storyboard for their videos. This change led to a significant improvement in video quality.

A related challenge was found in the poor quality of the critical annotations produced by the pre-service teachers. The pre-service teachers have had a great deal of difficulty understanding what is expected in a critical reflection of their own work, and frequently produced no more than a narrative description of what was contained in the video. This continues to be a challenge, however, in years two and three discussions of our expectations for the annotations during the student teacher seminars and BT3 workshops in years two and three of the grant has led to a marked improvement.

One of the somewhat unexpected, but very gratifying outcomes of this project was the building of relationships between the pre-service and inservice teachers. When asked "what was the most important thing they got out of the workshops," one of the most common responses was how pleased they were to get to know each other before the start of school. In fact, numerous anecdotes surfaced about growing collegial relationships (spring student teachers working in their mentors classrooms voluntarily during the fall; mentor and student teachers running after school enrichment programs together) and full-blown friendships (mentor teachers asking their student teachers to their homes for dinner) developing between the pre-service and inservice teachers.

For all of the project's success, there are a number of things a teacher preparation program should consider before adopting a model like BT3. Like all pilot programs, we faced challenges and learned many important lessons along the way.

To begin with, forming a steering committee that is dedicated to the process and willing to invest time in the project is an essential ingredient to success. The BT3 steering committee meets monthly. This regular activity actualizes ownership and investment in the program by all partners. Moreover, steering committee members not only attend meetings, but spend numerous hours participating in training sessions and workshops.

The Advisory Board is comprised of education deans, IT directors and coordinators, assistant superintendents, superintendents, principals, university faculty members, university administrators, an external evaluator, Southwest Educational Development Laboratory leadership, and other members of partnering institutions. Board members take an active role in recruiting and hiring program staff, and holding forums in partner schools and at the universities with the aim of introducing the Consortium's model and summer workshops to potential participants. Moreover, board members assist in making budgetary and programmatic decisions and attend national conferences to disseminate information about the program. They visit individual school sites to recruit partners to participate in the program. Additionally, the advisory board has helped in the development of a proposal for making the program a credit-bearing course in the curriculum of the School of Education at each higher education institution. The advisory board helps identify potential external funding sources, assists in the development of program materials, helps in the creation of the program website, and develops curriculum for the summer workshops. Without their dedication, the project would not have achieved the level of success that it has.

Adequate staffing is also essential to success. A full-time director (12 months) is essential to recruiting partner schools and inservice teachers, communicating regularly with these constituents, coordinating student-teacher and mentor teacher placements, delivering technology

training, facilitating faculty supervision, assessment and evaluation components, and generating sustained and continuing financial support for the program through external funding.

Implementation of this model also requires sufficient infrastructure resources to provide adequate technology facilities for delivering training and individual follow-up activities, availability and staffing of this facility, clerical support for the Program Director, office space, and operating budget. BT3 was fortunate to have partner schools that were willing to volunteer workshop space and computer laboratories. However, not all spaces worked equally well and long-term success of the project would be difficult without the additional funding that was secured to open a teacher education computer laboratory at St. Edward's University.

Full support from the dean of the school of education and/or another appropriate academic administrator; support and involvement of a faculty curriculum committee for ongoing course design; support and cooperation from university teaching supervisors; and comparable administrative support from the partnering institutions (IHE, LEA, evaluators, corporate funders) are all essential to a successful program.

In the case of BT3, the dean of the St. Edward's University School of Education was one of the original grant writers. Therefore, there was early buy-in to the project. Due to his efforts the university as a whole was informed about the project and lent its support. Involving faculty and administrators in decision making was vital to our success. Early in the project, when university faculty, staff and students challenged some aspects of the program, the dean's leadership was critical in moving the project forward. For example, during the first year of the project, the dean of the School of Education at St. Edward's University made participation in BT3 a requirement for all pre-service teachers. Initial reaction from university faculty and

students was negative. His leadership in pushing this forward and standing his ground led to ultimate acceptance of the program and its subsequent institutionalization.

Institutionalization needs to be particular to each institution. The team building and technology component (BT3 summer workshop) is essential, but how that component is structured, observed, and incorporated into a credit-bearing certification preparation program is unique to each institution. For example, one of our IHE partners used a single school site for training and field-placements; another IHE uses several schools/several districts, including private schools, for training and placements; another IHE conducts a residential summer program on their campus, with participant student/mentor teacher teams drawn from private schools statewide. The mission and history of the IHE weighs heavily in how the program will be uniquely institutionalized.

Although different programs may implement the model differently, the success of the BT3 model depends upon individualized learning and team building among the student-teacher/mentor teacher teams. Smaller programs with intense in-field internship supervision may be best suited to this methodology. No short-cut and quick-and-easy programs need apply!

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BT3 – Building Teams and Tools for Teaching
Student Teacher Unit Plan
Project Evaluation Rubric
2004-05

Work in Progress		***Approaching Mastery***		***Mastery***	
1	2	3	4	5	6
A. Unit Plan					
1. Plan doesn't address all relevant TEKS by providing TEKS numbers and phrases and the way in which the unit addresses each TEKS is not clearly articulated.		Plan addresses all relevant TEKS by providing TEKS numbers and phrases, but how each TEKS is addressed in the unit is not clearly articulated.		1. Plan addresses all relevant TEKS by providing TEKS numbers and phrases and clearly explaining how each TEKS is addressed in the unit.	
2. Plan doesn't address all relevant TEK Tech Apps/ISTE standards by providing numbers and phrases and the way in which the unit addresses each TEK Tech Apps/ISTE standard is not clearly articulated.		Plan addresses all relevant TEK Tech Apps/ISTE standards by providing numbers and phrases, but how each TEK Tech Apps/ISTE standard is addressed in the unit is not clearly articulated.		2. Plan addresses all relevant TEK Tech Apps/ISTE standards by providing numbers and phrases and clearly explaining how each TEK Tech Apps/ISTE standard is addressed in the unit.	
3. The Plan fails to use at least 3 different technology applications in a way that supports the unit's learning goals.		The Plan calls for at least 3 technology applications, but the technologies are not always used in a way that clearly supports the unit's learning goals.		3. The Plan uses at least 3 technology applications in a way that clearly supports the learning goals of the unit.	
4. Goals, strategies, preparation plan, materials used, assessment plans are incomplete, missing or not aligned with one another and do not consistently support the unit's learning goals.		One or more sections (goals, strategies, preparation plan, materials used, assessment plan) of the plan are incomplete or weak and/or there is a gap in the plan.		4. Goals, strategies, preparation plan, materials used, assessment plan are all clearly articulated and are consistent with and support the learning goals of the unit.	

Work in Progress		*Approaching Mastery*		*Mastery*	
1	2	3	4	5	6
B. Technology Infusion					
5. The technological applications don't fit well within the lesson and appear to be an add-on rather than an integral part of the lesson. The use of technology does not support the learning strategies or overall goals.		Students move through the lesson easily but the technological applications aren't always an integral part of the lesson. Some of the technology seems to be more of an add-on than integral to the lesson.		5. Students move seamlessly through the lesson using different technological applications. The technology is a seamless part of the lesson/unit.	
The learning goals of the lesson/unit could easily be met without using these particular technological applications at all.		6. The technology supports the learning goals of the lesson/unit, but there are better technological applications for the task(s) that the student teacher/mentor teacher should reasonably be expected to be aware of and use.		6. The technology is used in a way that clearly supports the learning goals of the lesson/unit.	
Neither the student teacher nor the mentor teacher is comfortable with the use of the technology and they can't answer student questions or help the students to find the answers. The teachers and students don't know what to do when technological problems arise and haven't thought about having backup strategies.		7. The student teacher and mentor teacher are comfortable with most of the applications and can help students answer questions that arise or direct them to someplace where the answer can be found, but tend to get flustered when problems arise and don't have clearly articulated back up strategies in place.		7. The student teacher and mentor teacher are both comfortable using the technologies. They have provided resources for the students to use to find answers to common problems and can help students find answers to other questions when they can't answer them themselves. Both students and the teachers are able to adapt when technological problems arise. The teachers have clearly articulated back up strategies in case of technology failures.	

Work in Progress		*Approaching Mastery*		*Mastery*	
1	2	3	4	5	6
C. Use of Constructivist Learning Strategies					
8. The teacher (mentor or student teacher) tells the students what to do and they follow step-by-step instructions.		Students are actively engaged in the lesson and are learning by doing. However, the instructions setting up the problem are either not clear, incomplete, or are so detailed that there is little room for creativity or independent problem solving.		8. Students are actively engaged in the lesson and are learning by doing. Instructions are clear and set up the problem. Students are given room for creativity.	
9. If the students have a problem or don't understand something the teacher simply gives them the answers.		When students run in to problems the teacher gives them some time to help each other explore solutions. When they don't find solutions quickly the teacher intervenes and gives them the answers.		9. Students are given the freedom to make mistakes and help each other learn how to solve problems. The teacher acts like a coach/facilitator in helping them develop strategies for finding solutions.	
The students are not expected to produce an identifiable product.		10. The students produce a product but it is something that does not have much meaning for them.		10. The students are required to produce an authentic product as an outcome of the lesson (one that is relevant to the lesson and holds significant meaning for them)	

Work in Progress		*Approaching Mastery*		*Mastery*	
1	2	3	4	5	6
D. Classroom Implementation					
11. The lesson that is taught does not closely resemble the items/strategies described in the lesson/unit plan. The actual lesson does not reflect the stated intention of the unit plan.		11. The lesson that is taught includes most, but not all of the items/strategies described in the lesson/unit plan. The actual lesson moves away from the intention of the stated intention of the unit plan.		11. All items/strategies mentioned in the lesson/unit plan are present and actually taught. The actual lesson clearly reflects the stated intentions of the unit plan.	
12. None of the relevant TEKS described in the unit/lesson plan are apparent and/or addressed. The lesson that is being taught does not reflect the unit/lesson plan and what was said about how the TEKS would be addressed.		12. Most, but not all of the Relevant TEKS described In the unit/lesson plan are apparent and/or addressed. The lesson that is being taught strays in some important ways from the way the unit/lesson plan said the TEKS would be addressed.		12. All of the relevant TEKS described in the unit/lesson plan are apparent and/or addressed in the lesson as it is being taught. The lesson clearly reflects the way in which the unit/lesson plan said the TEKS would be addressed.	
13. None of the relevant TEK Tech Apps/ISTE standards described in the unit/lesson plan are apparent and/or addressed. The lesson that is being taught does not reflect the unit/lesson plan and what was said about how the ISTE standards would be addressed.		13. Most, but not all of the relevant TEK Tech Apps/ISTE standards described in the unit/lesson plan are apparent and/or addressed. The lesson that is being taught strays in some important ways from the way the unit/lesson plan said the ISTE standards would be addressed.		13. All of the relevant TEK Tech Apps/ISTE standards described in the unit/lesson plan are apparent and/or addressed in the lesson as it is being taught. The lesson clearly reflects the way in which the unit/lesson plan said the ISTE standards would be addressed.	
14. The mentor and student teacher are not sensitive to student responses to the lesson and are not aware of the needs of the students.		The mentor and student teacher are sensitive to student responses to the lesson. They observe needs for change in the lesson but have difficulty changing their direction when needed to help students meet the original learning goals.		14. The mentor and student teacher are sensitive to student responses to the lesson and are able to evaluate and assess student needs and, if necessary, to adapt the lesson on the spot to student needs in ways that are true to the original learning goals.	

Work in Progress		*Approaching Mastery*		*Mastery*	
1	2	3	4	5	6
E. Assessment of Student Learning					
15. Assessment of student learning is not well integrated into the lesson and is at best an add-on to the lesson. No thought is given to how the assessment supports learning.		Assessment of student learning is well integrated into the lesson, but it is not integrated well into the process of learning itself.		15. Assessment of student learning is well integrated into the lesson. As much as is appropriate for the age group, students are engaged in self-assessment and/or peer-assessment and assessment of learning is made a part of the learning process.	
16. Students receive feedback after the lesson is over. Feedback does not come in time for students to reflect on their own learning.		Students receive feedback quickly (during the lesson or right as it ends) but students are not encouraged to evaluate their own learning or given feedback that helps them to reflect on their own learning.		16. Students receive instant/or nearly instant feedback on their performance. Feedback is timely and encourages and helps students reflect on their own learning.	
17. The way in which learning is measured does not relate to the learning goals of the unit and to what and how the students are expected to learn.		Measures of learning are generally appropriate to the type of learning desired, but could be more clearly articulated with the learning goals and what and how the students are expected to learn.		Measures of learning are appropriate to the type of learning desired. For example, the success of a project-based assignment includes measures of process as well as content and finished product.	
18. Only a single measure of student learning is used.		More than one measure of student learning is used, but they do not touch on multiple ways of demonstrating knowledge.		Multiple measures of student learning are used that reinforce each other and give students different ways of demonstrating knowledge (for example, student self-assessment as part of the lesson is combined with a test of content knowledge and a rubric for evaluating the presentation of the project.)	

BT3 – Building Teams and Tools for Teaching
Student Teacher Unit Plan
Project Evaluation Rubric
2004-05

Intern Teacher ID No. _____
Reviewer ID No. _____

Scoring Sheet	
A. Unit Plan	_____
B. Technology Infusion	_____
C. Use of Constructivist Learning Strategies	_____
D. Classroom Implementation	_____
E. Assessment of Student Learning	_____
Overall Score	_____
First Level Mastery	97 - 108
Second Level Mastery	86 - 96
Approaching Mastery	75 – 85
Work in Progress	74 or below

Comments: