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A Service Learning Model: Meeting NCATE Standards Through Educational Technology

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Abstract: Service learning can be described as learning experiences that serve the needs of a specific community and enable students to draw meaningful connections between theory and practice. Through service learning, students observe and model the behaviors, attitudes, and emotional reactions of others. It is important that education programs are built upon NCATE standards in order to ensure quality. This service learning model is based on an undergraduate level educational technology course. Through their participation in *Introduction to Computers in Education,* future teachers gain practical experience in a school-based environment that prepares them in the use of educational technology for teaching and learning.

The Role of Service Learning

Service learning can be described as learning experiences that serve the needs of a specific community and enable students to draw meaningful connections between theory and practice (Kretchmar, 2001; NCATE, 2002). Learning experiences play an active role in this process and are not primarily instructor centered but rather, they are experiences that build upon the learner's prior knowledge and skills. Bandura, 1970; Dewey, 1997; and Vygotsky, 1978 stress the importance of learning that takes place in a social context. Through service learning, students observe and model the behaviors, attitudes, and emotional reactions of others (Bandura, 1970). Peters and Stearns (2003) suggest that college education would be more successful if theory could be linked to a rich contextual background and not be taught in isolation.

Corrigan (2001) observes that service learning requires institutional support in order to be successful. From its inception in 1963, Sacred Heart University (SHU) in Fairfield, Connecticut has established a direct connection between its mission and the role of service learning. One of the goals of the SHU mission statement is to develop students that are able to respond to a variety of changing social and civil responsibilities (SHU, 2002).

Standards and Competencies

It is important for various reasons (e.g. consistency, equality) that education programs are built upon recognized national standards in order to ensure their quality (NCATE, 2002). The National Council for Accreditation of Teacher Education (NCATE) is a coalition of professional organizations that are committed to quality teaching and the accreditation of teacher preparation programs (NCATE, 2003). NCATE standards provide guidance in the development of college coursework that produces competent and caring teachers.

Educational Technology and the Service Learning Experience

According to ISTE (2002), teacher candidates must participate in field based-experiences that model best practices in the integration of technology into the core content areas. The Educational Technology Program (ETP) at SHU to introduces teacher candidates to the methods for integrating emerging technologies into the teaching and learning process (Bruciati, 2002). Through service learning teacher candidates will observe: the effective use of technology in the classroom, the classroom climate and the interaction between students, teacher and technology. Additionally, NCATE (2002) standards also require that service learning experiences should also allow time for teacher candidates to reflect on their learning.

A Model for Service Learning

While service learning has been integrated into the undergraduate education curriculum, it has not been an essential component in the Educational Technology Program (ETP) at SHU until the 2002-2003 academic year (Bruciati, 2002). In order to comply with the NCATE standards for 2003, it has been necessary to revise the existing framework on which the ETP had been founded. The addition of a required service learning component and opportunities for reflective practice were necessary for enabling teacher candidates to develop and demonstrate the knowledge, skills and dispositions for helping all students learn.

This service learning model is incorporated in an undergraduate level educational technology course that it is currently a part of the ETP of SHU, called *Introduction to Computers in Education* (SHU, 2003).

Through their participation in *Introduction to Computers in Education* (SHU, 2003), future teachers are prepared to use educational technology for teaching and learning. Practical experience is supplemented/reinforced through authentic assessments that measure each teacher candidate's ability to use a variety of technology tools for creating learning experiences that meet the diverse needs of all students. For this experience to be fruitful, a careful design of the pedagogy of service learning must be planned so that students are intellectually challenged and supported during this experience.

Service Learning Characteristics

This service learning component fulfills a set of characteristics, which are:

- How the service learning experience relates to the course content and objectives.
- How the course provides solid foundations for students to think about technology and school issues and relate them to course readings and materials.
- How the course ties experience with theory and teaching standards.
- How the service learning component allow pre-service teacher candidates to observe teaching in action.
- Offering a forum for SHU students to share their experiences, ideas, as well as challenges, to learn from each other and from the faculty.
- Spending a minimum of 12 hours, in an urban school setting.
- Providing clear assessment rubrics and benchmarks.
- How partner schools are involved in the guidance and evaluation of the candidates.
- How partner schools recognize the need to develop more experiences to expose pre-service teacher candidates to school life as a whole.
- How partner schools are briefed at the end of the semester about SHU students' reflections.

Critical Reflection

Undergraduate students reflect on a set of questions before starting the service learning component. Critical reflection is a key element of the service learning model allowing students to consider both personal and professional issues as they embark in their journey into becoming a teacher.

Some questions students might address are:

- How can classroom theory be applied to service learning?
- What specific skills do they hope to acquire or improve upon? (E.g. classroom management techniques, familiarization with educational software)
- How do pre-service candidate students think individual differences among partner school students can be addressed?
- How do they want their service learning experience to influence or impact their future education and future career plans?
- What personal rewards and benefits do they hope to receive as a result of this experience?

Dynamics of Service Learning Model

Key participants in this model are the partner schools, their communities, SHU students and faculty. Each group benefits from the added interactions and support created the service learning effort. Figure 1 describes the dynamics among these partners of service learning.
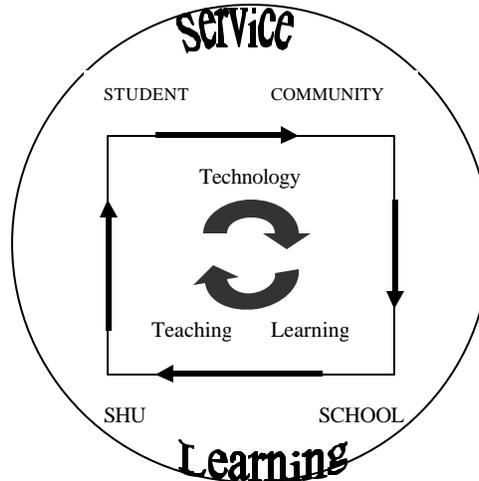
Figure 1, Summarizes the Dynamics of Service Learning Model

Role of the Faculty

The faculty role becomes one of facilitating the service learning experience and participating in a series of activities that are not part of the traditional course load. These activities include,
- Developing relationships with urban schools.
- Group meetings with SHU students at the urban schools.
- Obtaining feedback concerning the SHU student performance.
- Sharing this experience with SHU faculty and staff and schools partners.
- Helping SHU students reflect on their own experiences and how they might transfer/apply this knowledge into other courses.

The faculty explicitly states a structure and a conceptual framework in the course syllabus by creating a specific module that refers to service learning requirements and materials. At the beginning of the course students are briefed about the requirements for service learning, based on a set of written assignments including research, observation, collaboration and critical reflections. Pre-service teacher candidates do oral exposés concerning their service learning experiences and how they relate to the course during the academic semester.

Role of the Partner School

The partner school and specifically the mentor teacher, who directly supports and supervises the SHU student, assists in the use of a standards-based, technology-infused curriculum by:

- Supporting the use of educational technology tools (e.g., Microsoft Office™ , Educational software, Assistive technology);
- Encouraging Internet use in the classroom to teach core curriculum content standards;
- Facilitating communication with undergraduate students via e-mail as well as verbally;

- Suggesting area of improvements and successes regarding the integration of technology in the classroom;
- Sharing ideas and activities on how to integrate technology to teach core curriculum content standards;
- Willingness to answer questions concerning school hardware and software;
- Utilizing the school website for educational purposes;
- Discussing with SHU students district policies concerning Internet safety, legal and ethical issues concerning technology and education;
- Evaluating the SHU student's performance at the end of the service learning experience;
- Allowing SHU students to observe teaching in action.

Role of the SHU Student

SHU students play an active role in the service learning experience component. Three phases describe this process: (1) the initial phase, (2) the working phase and (3) the final phase. These phases are completed during a twelve-week period and illustrated below.

The Initial Phase

At the beginning of the semester, SHU undergraduate students meet with a partner school from a list provided by the course instructor. The focus of this meeting is primarily on creating a work plan (observation times), establishing a relationship and getting to know the school curriculum, technology resources, the school premises and the neighborhood. Through the use of state resources (e.g.: Connecticut State Department of Education web site), strategic school profile, CCTC (Connecticut State Department of Education, 1999), ISTE (2003) and NCATE (2003) standards, Connecticut Code of Professional Responsibility for Teachers (Connecticut State Department of Education, 1999) and demographic information of the surrounding community, students gain a working knowledge of the school, community and educational environment. Note at this point in the course, students possess basic skills in Microsoft Office^{TM} and Internet usage; however, they have limited knowledge concerning any educational software.

The Working Phase

In the more intensive working phase of the service learning experience, the SHU pre-service teacher candidates interact with the urban school students and teachers, observe teaching in action, observe the urban school students' working behaviors and patterns. SHU students also keep a log concerning the introduction of technology in the curriculum, types of software and hardware the school has, the resources the urban school has for staff development in technology, the interactions the teacher has with the students and with them.

In order to demonstrate the mastery of learning outcomes and competencies, each student is required to maintain a journal, that records the time spent along with their observations in the following areas: (1) the integration of technology in the curriculum, (2) the types of software and hardware used in the school, (3) the availability of staff development opportunities in technology, (4) the availability of assistive technology in the school and (5) teacher student interactions.

The Final Phase

The final phase begins when pre-service teacher candidates are evaluated. Each mentor teacher completes an evaluation form that summarizes the candidate's attitudes, interest, professionalisms, motivation and ability to interact with school students in a meaningful manner. An online discussion forum enables undergraduate students to share their experiences and provide feedback to each other.

By going through this process, students have goals, group support, a conceptual framework, and a forum to reflect upon technology integration, teaching and learning. Table 1 summarizes the Service Learning component of the course *Introduction to Computers in Education* (SHU, 2003).

TABLE 1 : Service Learning Project (SLP)

Course Title: *Intro to Computers in Education* (SHU, 2003)	
Service Learning Role	The SLP will provide teacher candidates with an experiential context in which to apply technology and educational skills and examine how technology is integrated in urban schools. They will have the opportunity to reflect on their observations, share ideas, and observe teacher and students interactions. Teacher candidates will provide documentation that will reflect on their learning and their views about service learning.
NCATE Standards (relate to SLP)	**I I . U N I T C A PAC I T Y (NCATE, 2002)** **Standard 3:** *Field Experiences and Clinical Practice* The unit and its school partners design, implement, and evaluate field experiences and clinical practice so that teacher candidates and other school personnel develop and demonstrate the knowledge, skills, and dispositions necessary to help all students learn. **Standard 4:** *Diversity* The unit designs, implements, and evaluates curriculum and experiences for candidates to acquire and apply the knowledge, skills, and dispositions necessary to help all students learn. These experiences include working with diverse higher education and school faculty, diverse candidates, and diverse students in P–12 schools.
CT Teaching Competencies (relate to SLP)	**CT State Department of Education Competencies (1999):** Elementary Competency E7 / Secondary Competency E9 In order to support students' development, learning and well being, collaborate/consult with adults, families, agencies and professionals within the school and community **CT Common Core of Teaching Competencies** (Connecticut State Department of Education,1999) : **Part I** *Teachers understand the central concepts and skills, tools of inquiry and structures of the discipline(s) they teach by:* **I.4.b** learning about and using computer and information technology as an integral part of teaching their discipline(s) **I.4.d** being aware of the evolving nature of subject matter knowledge and the need for keeping abreast of new ideas and understandings within one's discipline, including the impact of technology and information sources on the nature of teaching communications and the development of knowledge **Part III** *Teachers seek out opportunities to grow professionally through means such as:* **III.4.b** enriching their knowledge about content, learners, pedagogy, technology and the U.S. public school system through the examination of professional literature, participation in professional organizations, attendance at professional development seminars or ongoing graduate-level coursework
Assessment Criteria include	• Journal Reflections • Share experiences and provide feedback to others • Mentor teacher evaluation form • Time spent in school

When pre-service teacher candidates complete their field experience, they are evaluated through a series of questions that fosters their reflective process. Through reflection, they will have the opportunity to think how their experiences can improve their educational practice and their decision-making power concerning education and technology issues. Reflection questions to support this process include:

- What did you find the most rewarding from this experience?
- What did you find most challenging from this experience?
- How did this experience change your perception on how schools use technology?
- How could the school you worked at improve its use of technology?
- What types of assistive technology did the school have in placed?
- How would you describe the culture (environment, climate, feeling) in the school you worked at?
- How did you feel while working in this school?
- Did you establish a special relation (e.g. tutor, mentor) with one particular student or group of students? Describe the interactions.
- Has this experience created any new opportunities for you? Describe.
- What did you learn about yourself as a result of this experience?
- What would you change about this experience?
- Would you go back to this school and do more work (e.g. internship, student teaching, for another course)? And why?

Conclusions

By meeting the NCATE standard 3: Field Experiences and Clinical Practices, *Intro to Computers in Education* (SHU, 2003) and the *Service Learning Project* (SLP) grants teacher candidates the opportunity to use technology to support teaching and learning in urban settings.

Key elements of this service learning model include a hands-on approach for problem-based learning, the ability to transform theory into practice and the opportunity for students to reflect on and share their experiences with others. Service learning allows students to become actively involved in their own learning and apply their learning in a real world situation. This opportunity provides students with the chance to observe and think about diverse point of views about teaching and learning with technology as well as better understand the challenges that schools are facing today.

Implications for future course work are (1) building relationships with partner schools and (2) the creation of a service learning repository containing a collection of students' best practices concerning service learning and its impact of K-12 curriculum and technology integration.

Partner schools embracing technology tools to enhance teaching and learning need to be identified. The development and maintenance of school partnerships is critical to the success of a SLP.

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