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From local school communities to federal legislation, there has been increased attention paid to the preparation and quality of pre- and inservice teachers. Most notably, the No Child Left Behind (NCLB) Act of 2001 established a national goal of having highly qualified teachers in every classroom by the end of the 2005-2006 academic year. Further, the NCLB act has encouraged the use of "evidenced-based education" in helping teachers to become more prepared to make decisions in their classrooms and schools. This article presents a critical commentary as to the manner by which teacher preparation programs can help work towards the national goal of preparing and developing highly qualified practitioners by explicitly paralleling field-based experiences to research activities. Consistent with the expectations of federal legislation and advocates for the professionalization of the teaching profession, this approach will help educators to understand and use research skills and data in ways that can improve teaching and learning activities.

Introduction

In various legislative acts the United States Department of Education definitively promotes the improvement of teaching and learning through the use of scientifically-based research practices (e.g., the *Elementary and Secondary Education Act* and the *No Child Left Behind Act*). Most of the recommendations suggest that before making changes in their classrooms or schools, practitioners should become knowledgeable in reading and interpreting data derived from research studies (Coalition for Evidenced Based Policy, 2003; Office of Postsecondary Education, 2005). And while this practice moves the

nation toward having highly qualified teachers in every classroom, there is more that can be done. Not only can teacher educators encourage pre- and inservice teachers to read educational research, we can also help practitioners to participate in field-based experiences that are consistent with the rigors of research methods.

Field-based experiences are essential components in most teacher preparation programs. The importance of these types of experiences is not only demonstrated by their emphasis in various teacher education programs, but also by the state mandates that require field-based experiences to exist (Armstrong, 1989-1990). Further, the National Council for the Accreditation of Teacher Education (NCATE) has standards that not only require the more than 600 accredited colleges of education to have field-based experiences and clinical practices, but also expect that those activities are rigorous in preparing and developing professional educators (www.ncate.org).

In addition to national organizations and federal legislation, there are many members of the educational community who support the professionalization of teaching. A major focus for these advocates is the development of standards in teacher preparation programs. With the goal of making meaningful connections between preparation and practice, teacher candidates are expected to spend significant time in field-based and clinical activities while engaging in systematic inquiry through various research methods (Cochran-Smith, 2001; Darling-Hammond; 1998; Wise & Leibbrand, 2000). Further, it has been suggested that these types of field-based experiences must be an integral, coherent, and ongoing part of teaching training (Feiman-Nemser, 2001).

Through field-based and clinical experiences, prospective teachers are able to gain insight into various facets of the profession. Benefits of these experiences include opportunities for preservice teachers to witness both the diversity of our nation's school children, and the need to have a repertoire of teaching strategies that will meet students' various learning styles (Cochran-Smith, 2001; Donovan et al., 2000; Feiman-Nemser, 2001; Snell, 2003). In addition to race, class, and gender diversity, many teachers will be required to work with special needs students who may have a range of learning and/or behavioral disorders as well as students who are second language learners. While most teacher preparation programs will provide students with valuable theoretical and methodological classroom experiences,

it is difficult to ignore the importance of field-based experiences for preservice training and inservice professional development (Feiman-Nemser, 2001; Frank & Uy, 2004; Perry & Power, 2004; Whipp, 2003).

Although the mention of field-based or clinical experiences often generates thoughts of student teaching, this article proposes a few other activities in which teachers-in-training may participate. In general, these experiences are presented in a manner that suggests that while preservice teachers are developing their knowledge base in the academy, they would also be participating in field-based experiences that would allow them to gradually increase their activities and responsibilities in schools (Feiman-Nemser, 2001). One common experience is *clinical observation*, which is the process of watching, without participating or attempting to alter, specific behavioral occurrences in natural (e.g., the classroom) or artificial (e.g., laboratory) settings. Another type of field-based experience is *professional shadowing*, which involves the nonobtrusive accompanying of an individual whose profession one wants to explore. *Student teaching* is a supervised activity wherein prospective teachers have a hands-on opportunity to experience working with teachers and their students. These and other field-based activities can be enhanced through reflective journaling, which is a method of critically documenting, thinking about, and interpreting a relevant phenomena or occurrence. And although reflective journaling often stems from clinical experiences, it can occur before, during, and after experiences in the classroom or school.

Field-based experiences vary in structure and approach. Consequently, what students learn from these experiences also varies. Due to the importance of clinical experiences, it is essential that teacher educators help students develop the skills that will enable them to make the most of field-based activities. The teaching of these skills should become standard across all teacher preparation programs and should include procedures that account for the dynamic changes in teaching and learning and the diversity of abilities teachers and students bring to the classroom (Cochran-Smith, 2001; Darling-Hammond, 1998; Feiman-Nemser, 2001). Teaching research strategies, with a focus on documentation, can help to maximize the structuring, viewing, and understanding of field-based experiences.

The World of Field-Based and Clinical Experiences

There is no shortage of support regarding the benefits of field-based experiences (e.g., Darling-Hammond, 1998, 2005; Frank & Uy, 2004; Perry & Power, 2004; Whipp, 2003). For instance, most teacher preparation programs expect that clinical experiences will provide students with a first-hand opportunity to witness and practice the theory and methods presented in the academy (Donovan et al., 2000; Duquette, 1997; Heuser & Owens, 1999; Perry & Power, 2004). These experiences should also allow prospective teachers to see how changing demographics and educational policies influence classroom settings and school activities (Cochran-Smith, 2001; Darling-Hammond, 1998; Donovan et al., 2000). Most importantly, field-experiences should challenge preservice teachers to critically consider their understanding and expectations of teaching and learning and their choice to enter the profession.

Cochran-Smith & Lytle (1993) have asserted that "research by teachers is a significant way of knowing about teaching" (p. 43). And when advocating for field-based learning experiences, scholars have used a variety of phrases such as "learning through experience," "authentic learning," "practitioner inquiry," and "knowing-in-action" (Cochran-Smith, 2001; Pierce, 1996; Schön, 1995; Upitis, 1999); however, regardless of the terminology used, the objectives are the same. The major goal of field-based activities and clinical experiences is to become intimately acquainted with the profession while attending to, and engaging in, the natural unfolding of activities related to teaching and learning.

Although the importance of clinical experiences is widely agreed upon, the timing and impact of these activities often varies. For instance, in a series of poignant questions, David Armstrong (1989-1990) challenges the education community to consider how early in teacher preparation programs prospective teachers should participate in field experiences. While some may believe that earlier experiences are better because they provide more opportunities to engage in and reflect upon their activities, others believe that without sufficient theoretical preparation and support students will lack the ability to properly place their experiences in context (Armstrong, 1989-1990; Duquette, 1997; Upitis, 1999). Some theorists have even presented

experiences in the academy and in the field as a dichotomy of learning opportunities wherein the academy represents neatly-packaged opportunities for higher-order thinking and theoretical problem-solving, and field-based experiences offer occasions to participate in useful and practical activities that represent real-world complexities (Schön, 1995). However, the position presented here proposes that these experiences should not be viewed as dichotomies, but as positions within a recursive loop. In order for students to maximize their clinical experiences, they should have some theoretical context in which to critically view and interpret what they experience. Similarly, in order for students to value theory, they should witness its practical application and utility. Therefore, there should be ample opportunities for students to vacillate between, build upon, and learn from each type of experience.

Students in teacher preparation programs are more likely to benefit from the interdependent nature of academic and clinical experiences due to the increasingly common partnerships between school districts and universities and the creation of professional development schools (Duquette, 1997; Sandholtz & Wasserman, 2001; Wise & Liebbrand, 2000). Linda Darling-Hammond (2005) notes that professional development schools which are "developed at the intersection of preservice education and inservice teaching ... provide the kind of thoughtful induction to practice needed to enable teachers to make informed judgments in complex situations with the support of colleagues in a reflective, knowledge rich environment" (p. 6).

Professional development schools provide opportunities for students to work with university professors and cooperating teachers to explicitly link lessons learned in the academy with experiences they have in schools (Donovan et al., 2000; Duquette, 1997; Heuser & Owens, 1999; Wise & Liebbrand, 2000). In some of the strongest arrangements, university faculty members spend time in the classrooms with their students and the cooperating teachers which provide each with a first-hand perspective of the students' field-based experiences. Further, as educational institutions continue to face issues of reform, many schools and universities in these partnerships work in concert to ensure that preservice teachers witness and experience a range of instructional strategies that will accommodate the learning abilities of diverse learners (Darling-Hammond, 2005).

Professional development schools have guiding principles that encourage the use of research and the connection between schools and universities. However, in the absence of this formal arrangement, it seems useful to incorporate practices that have been successful in teacher preparation programs that are associated with professional development schools. The use of research methods is one such practice that has the potential to strengthen the relationship between schools and universities by helping to establish a standardized process in which students', teachers', and professors' perspectives can be focused, presented, and compared.

The Basics of Research Methods

In the same way that scholars have indicated the benefits of research strategies for inservice teachers (Cochran-Smith & Lytle, 1993; Moore, 1999; Neubert, 1989; Snell, 2003), strategies learned from educational research courses could provide preservice teachers with some basic skills to help them think about, structure, and evaluate their clinical experiences (Cochran-Smith, 2001). In fact, many qualitative research methods are inherently built into the field-based activities that are expected of prospective teachers. The act of taking preservice teachers out of the university and placing them in schools is very similar to the ethnographic work of anthropologists and other researchers who leave their own milieu to enter an authentic context in which they expect to become more informed about a particular group of people, policies, or actions (Darling-Hammond, 1998; Frank & Uy, 2004; Wise & Liebbrand, 2000). In this respect, thinking about field-based experiences can be similar to planning a research project. In both instances, there should be some theoretical framework that helps to connect concepts, predict outcomes, and interpret findings. The link between theory and practice cannot be underestimated. Students must understand that all clinical experiences can be framed in terms of theory. Not only can theory help students to think about field-based experiences, it could also help students to structure them.

While some field-based experiences are structured by the faculty of the teacher preparation programs, other experiences are constructed by the school district and still others are left to the whim of the students themselves. Once again, if field-based experiences were

thought of as research studies, they would be consistently structured and focused around a series of meaningful, theory-driven questions. In addition to providing the foundation for an academically anchored clinical experience, this approach would also help to establish some common ground from which university faculty, cooperating teachers, and preservice teachers could share their perspectives.

An additional benefit to structuring field-based experiences like research studies is that the process will help practitioners to focus on, document, evaluate, and reflect on relevant information (Cochran-Smith & Lytle, 1993; Darling-Hammond, 1998; Feiman-Nemser, 2001). As research methodology demonstrates, there are logical steps to employ when collecting data (Creswell, 2004). For preservice teachers, the "data" to be collected would be the documentation of information that addresses the objective of the field-based or clinical experience. In both instances it is important to identify people, places, and activities that will address the goal of the study or field experience. Further, this approach could help to formulate the data collection instruments. Whether prospective teachers use checklists, observation logs, or systematic fieldnote strategies, it is important that the data collection method is logical and easy to follow, linked to the objective of the clinical experience, and consistent across all visits in order to allow for comparisons.

And there are still other aspects of research methods that should be considered during field-based experiences, such as analyzing, interpreting, and presenting findings (Cochran-Smith & Lytle, 1993; Darling-Hammond, 1998; Feiman-Nemser, 2001). In addition to collecting data, preservice teachers need to be able to organize, interpret, and present what they have experienced. This is an important part of any research project or field experience because it demonstrates one's understanding, insights, and contributions to the field. Prospective teachers should be instructed to document their clinical experiences in such a way that they are able to identify important elements of their field-based activities, compare those elements to what theory would expect, and present their findings in a clear and thoughtful manner.

Documentation: The Key To Incorporating Research Strategies Into Field-Based and Clinical Experiences

While theory should be seen as the framework that guides field-based and clinical experiences, the manner in which those experiences are documented is paramount. Documentation serves as a tangible tool that can be transported between academic and field-based experiences while creating concrete connections between theory and practice. The development and use of a data collection instrument will help preservice teachers to efficiently and systematically structure, document, and gain insight from their field-based and clinical experiences. Although there is flexibility in the different types of data collection instruments, documentation should allow preservice teachers to quickly, easily, and consistently identify phenomena of interest. A strong data collection instrument will be beneficial in many aspects of field-based activities, including contextualizing, focusing, evaluating, and interpreting the experience. The following sections illustrate how important documentation can be when thinking about field-based activities like research studies.

Establishing the Context

Research in anthropology, sociology, education, and other disciplines has demonstrated the importance of providing detailed descriptions regarding the setting in which data are collected. This type of information provides the reader with insight that may influence the data collection process as well as the actual data. In many instances, the activities that take place are directly related to the space in which the activities occur. One of the reasons that field-based experiences are so important in teacher training is because they allow preservice teachers to see teaching and learning in context. For instance, most people would expect that teaching and learning would look different in elementary, middle, and high schools. However, experienced educators and researchers would also be interested in other influential variables such as (a) the experience of the teacher (e.g., novice or veteran), (b) the resources of the school, (c) the classroom management strategies, (d) the method of instruction, (e) the subject being taught, (f) the classroom set-up, and (g) the composition of the students in the classroom (e.g., males, females, second language learners, special needs

students, etc.). Awareness of the context in which teaching and learning takes place will provide another layer of understanding to the field-based or clinical experience (Frank & Uy, 2004).

Information about the context may be documented by writing an in-depth, narrative description about the data collection site, by drawing a map that depicts the physical layout of the site, and/or by providing a header on the data collection instrument that identifies the details of the data collection session. A brief elaboration of the latter option may help to illustrate the point. For any field-based or clinical experience, prospective teachers should create a standard header that can be used with the data collection instrument. In its most basic form, the header should identify the type of field-based activity and contain (a) the day, date, and time; (b) the class, grade level, and school (or pseudonym); (c) the name of the staff member, teacher, or administrator (or pseudonym); (d) the composition of the students involved; (e) the subject being taught; (f) the length of instructional time; and (g) any other special arrangements or equipment in the classroom. Several scholars provide examples of these types of headers when proposing various data collection instruments for field-based observations of teachers and students (e.g., Creswell, 2004; McNeely, 1997). See Figure 1 for an example of a header for a data collection instrument.[1]

Providing Focus in Clinical Observations

Preservice teachers are often required to observe classrooms in an attempt to witness and gain insight into the many facets that are involved with teaching and learning. One of the first steps in preparing for this field-based experience, which is very similar to the undertaking of many research projects, would be to clearly identify the topic under investigation. This process not only ensures that the project is manageable, but that the project also has a well-defined focus. While there may be some benefit to generally observing a classroom, the true richness of the experience comes from knowing what to look for and understanding the logic of the events that unfold. Due to the quick pace, charged atmosphere, and ever-changing activity that often occurs in many classrooms, it is important that preservice teachers do not become overwhelmed due to lack of focus. Without having a particular theory, methodology, or activity to follow, the untrained eye may gather

School: *USA High School* **Teacher's Name:** *Ms. X*

Grade Level: *Ninth (9th)* **Floor:** *Second Floor* **Room Number:** *213*

Number of Students Present in the Classroom: *30 Students, 17 females and 13 males*

Numbers of Adults Present: *One adult is present in the classroom, the teacher*

Day: *Today, 2004* **Start Time:** *9:00 am* **Finish Time:** *10:00 am*

Subject Matter: *Biology*

Special Room Set-up and/or Equipment: *Students are sitting in five groups of six around microscopes.*

Observation Topic: *What types of information processing strategies does a teacher use in the classroom?*

Figure 1. Creating a Header for a Field-Based Experience Data Collection Instrument

a range of information without any depth of understanding. Thus, it is important to be sure that, regardless of the field-based or clinical experience, prospective teachers are aware of the theories that will support and guide their activities.

The data collection instruments that preservice teachers use should be, at the very least, semistructured around key aspects of theory to help them focus on and document their field-based experiences. While all data collection instruments should have an option to record activities that are not anticipated by theoretical perspectives, having some framework for helping preservice teachers view and understand their clinical experience may initially be very useful. When the data have been collected and organized well, preservice teachers will be able to systematically look at the data to determine the circumstances in which theory does and does not support the empirical evidence. In order to inform decisions regarding the applicability of theory, preservice teachers should document as much information in detail as they can. They should also be sure that there is a clear distinction between the recording of objective facts and the observers' subjective reflections. While both perspectives are valuable, it is important to keep them separate for analysis.

Let us imagine that a class of prospective teachers has been assigned to observe a language arts course for 20 hours. After making sure that the focus of the field-based experience is something that holds meaning for the educational community, is physical and observable, and can be guided by theory, the students are ready to begin. Perhaps the students are interested in the manner in which a teacher encourages desirable behaviors or extinguishes undesirable behaviors. An appropriate theory to address this type of inquiry would be B.F. Skinner's theory of operant conditioning. A theoretical perspective such as this should help to guide the prospective teachers' thinking about the topic as well as provide relevant information to be included in the data collection instrument. An efficient data collection instrument is one that not only highlights the major aspects of theory, but also includes other relevant criteria. What strategies does the teacher use? When? With which students? What are the results? An example of a data collection instrument for this observation is presented in Figure 2.

Gaining Insight Through Professional Shadowing

While many people aspire to be educators, few prospective teachers are fully aware of the ongoing, time-consuming, multitasking required of professional practitioners. Although classes are offered in teaching methods, classroom management, and professional development strategies, it is often difficult for preservice teachers to envision how the various components of the profession fit together. Professional shadowing helps prospective teachers appreciate the many responsibilities of an educator. To maximize the benefits from this field-based activity, it is useful to employ research strategies as guidelines for this type of experience.

Professional shadowing is the field-based activity where one unobtrusively accompanies an individual whose profession one wants to explore. Preservice teachers may shadow a variety of practitioners including master teachers, curriculum specialists, and principals. This activity can be enhanced by systematically and categorically documenting the experience with a portable data collection instrument. The construction of the data collection instrument can be flexible, but it should allow preservice teachers to identify the practitioner's different professional responsibilities and activities, such as planning and preparation, instruction, advising, administration, and professional

School: *USA Elementary School* **Teacher's Name:** *Mr. X*

Grade Level: *Fifth (5th)* **Floor:** *Third Floor* **Room Number:** *321*

Number of Students Present in the Classroom: *28 Students, 18 females and 10 males*

Numbers of Adults Present: *Two adults in the classroom, the teacher and the teacher's aide*

Day: *Today, 2004* **Start Time:** *11:00 am* **Finish Time:** *12:00 pm*

Subject Matter: *Language Arts*

Special Room Set-up and/or Equipment: *Students sitting in a circle around a multi-media cart for a PowerPoint™ presentation.*

Objective of the Observation: *To determine how a teacher uses operant conditioning to encourage or extinguish students' behavior.*

Response to Stimulus	***Goal: To Encourage or Extinguish Behaviors***	***Description of Precipitating Behavior***	***Operant Conditioning***	***Response***
Reward				
Verbal	Encourage	Student gave correct answer	Teacher said, "Good job!"	Several students smiled
Social	Encourage	Students finished assignment	Teacher gave them recess	Students chatted
Physical	Encourage	Student cleaned up his desk	Teacher gave a high five	Students applauded
Punishment				
Verbal	Extinguish	Student arrived late to class	Teacher reprimanded ...	Student looked down
Social	Extinguish	Class was too noisy	Teacher took away recess	Students were sad and ...
Physical	Extinguish	Student talked to neighbor	Students were separated	Students resumed work

Figure 2. An Example of a Data Collection Instrument for an Observation

development. Further, the data collection instrument should allow prospective teachers to describe the activities, when they occurred, and whom the activities involved. When this information is documented and presented in this type of format, it helps to provide teachers-in-training with a realistic representation of an educator's responsibilities. Figure 3 provides an example of a data collection instrument that can be used when shadowing a practitioner.

Self-Evaluation of Student Teaching

Student teaching is the clinical experience wherein, under the supervision of cooperating teachers and guidance from university professors, preservice teachers become responsible for instructional activities with a group or a classroom of students. In many instances these preservice teachers will have the opportunity to plan, prepare, teach, and evaluate instructional activities. Further, at this stage prospective teachers will have access to a variety of data sources, such as interactions with students and the cooperating teacher; students' grades and assessments; and feedback from students, the cooperating teacher, and the university faculty. Student teachers should use all of the information at their disposal to help them evaluate this clinical experience. Research strategies can be especially useful when attempting to objectively self-evaluate this experience.

Student teachers can consider the various theories and methodologies that they learned in their teacher preparation programs and apply them to their lesson plans, and they can systematically determine which approaches are the most successful for the students with whom they are working. Further, they can compare what the intentions and goals of the lesson were to the reaction and feedback of the students and the cooperating teachers. Because teaching can be a very "in-the-moment" activity, many novice and veteran teachers are not always clear about what works and why. Student teachers would be well-served if they began their careers evaluating and documenting their own practice as well as the social, emotional, and academic growth of the students. Learning about and using research strategies to help monitor and self-evaluate professional activities can be an asset throughout one's career.

School: *USA Middle School* **Teacher's Name:** *Dr. X* **Position:** *Master Teacher, English*

Certifications/Endorsements: *Type 75, Reading Specialist, Middle School Endorsement. Dr. X was the former principal of Anytown Middle School for 15 years. Since retiring, Dr. X has helped raise the reading scores in three middle schools. Dr. X recently joined the faculty to assist in raising the reading scores of USA Middle School.*

Grade Level: *Seventh (7th)* **Floor:** *Second Floor* **Room Number:** *216*

Day: *Today, 2004* **Start Time:** *9:00 am* **Finish Time:** *2:00 pm*

Objective of the Experience: *To shadow an educator and determine, "What types of activities occupy an educator's day?"*

Type of Activity	***Description***	***Duration***	***Involving Whom***	***Observer's Comments***
Planning and Preparation	Met with other teachers to discuss the next integrated unit.	12:05-12:35	Two novice teachers and one veteran teacher.	Although they met briefly, they were very efficient.
Instructional	Taught a block class with some lecture and some individual and group activities.	9:50-11:30	A 7th grade class consisting of 12 males and 14 females.	At any given time students were engaged in a range of activities ...
Advising	Met with student and her parent to discuss state reading test preparation.	9:05-9:35	A student from her 5th period class and the student's parent.	This was an impromptu meeting, yet the teacher was very prepared.
Administrative	Arranged for state reps to visit the school to advise on the standardized tests.	1:35-2:00	Three other teachers and the state test representatives.	This was a unique arrangement based on Dr. X's connections.
Professional Development	Dr. X takes a reading improvement course at a local university.			Dr. X attends the class on Saturday mornings.
Other	Student came to serve a detention.	2:00	Student A from 3rd period	Dr. X often serves as an informal disciplinarian for the 7th grade.

Figure 3. An Example of a Data Collection Instrument for Professional Shadowing[2]

One of the great benefits of student teaching is that it offers preservice teachers the opportunity to learn through their own activity (Cochran-Smith, 2001; Perry & Power, 2004; Schön, 1995). However, if teachers, whether they be preservice, novice, or veteran educators, do not take the time to objectively and systematically evaluate their practice, they may find themselves in the position of repeating activities, not because of the activities' success, but because of the teachers' comfort and familiarity with the activities (Feiman-Nemser, 2001). Therefore, student teachers, like inservice teachers, should let objective, research-type questions guide the systematic inquiry of their practice (Moore, 1999; Perry & Power, 2004). On a regular basis they should ask themselves, "What is it that I expect the students to get out of this lesson or activity?" and "How will I know if the teaching and learning were successful?" In addition to using academic end-products and evaluations such as exams and other assessments, student teachers should identify and record noteworthy aspects of the teaching and learning process as well as other indicators of student comprehension. This could be done by creating a checklist regarding concrete aspects of learning activities that the student teacher wants to accomplish coupled with reactions from students. In addition, student teachers can compare their self-evaluations to the formal and informal assessments from cooperating teachers and university faculty.

Imagine that a student teacher has the opportunity to work with a 1st-grade class. The teacher-in-training may want to determine how to identify and build upon the different learning abilities of the children in the class. The student teacher may use Howard Gardner's theory of multiple intelligences to guide the self-evaluation of this clinical experience. By asking the theoretically driven question, "What am I doing to identify and develop the students' multiple intelligences?" the student teacher can conceptualize the necessary components of a self-evaluative data collection instrument. At its most basic level, this type of instrument should include the different types of skills identified in Gardner's theory along with descriptions of the activities used to develop those skills, when those activities were used, and how they were received by the students. Figure 4 offers a version of this type of data collection instrument.

School: *USA Elementary School* **Teacher's Name:** *Mrs. X* **Subject Matter:** *Language Arts*
Grade Level: *First (1st)* **Floor:** *First Floor* **Room Number:** *106*
Number of Students Present in the Classroom: *25 Students, 13 females and 12 males*
Numbers of Adults Present: *Two adults in the classroom, the teacher and the student teacher*
Day: *Today, 2004* **Start Time:** *8:00 am* **Finish Time:** *1: 00 pm*
Special Room Set-up &/or Equipment: *Students move in groups of 4 or 5 to various learning centers throughout the day.*
Clinical Objective: *To determine what I am doing to develop the students' multiple intelligences and learning abilities.*

Type of Skill	*Activity*	*Duration*	*Response*	*Comments*
Verbal	*Students created poems based on phonics lesson.*	*8:30-9:15*	*First students struggled ...*	
Mathematical	*Students added and subtracted items in the room.*	*9:30-10:00*	*Students were responsive*	
Spatial	*Students arranged their leaves in a collage.*	*11:00-11:35*	*Students were excited ...*	
Bodily-Kinesthetic	*Students learned a song and dance about anatomy.*	*12:30-1:00*	*Students had fun, but ...*	
Musical	*Students learned a song and dance about anatomy.*	*12:30-1:00*	*Enjoyed the rhythms more*	
Interpersonal	*Students worked in groups on their poems.*	*8:30-9:15*	*Needed lots of assistance*	
Intrapersonal	*Students were asked to list five self-descriptive adjectives.*	*1:40-2:00*	*Was a little difficult ...*	
Naturalistic	*Students collected leaves for their collages.*	*10:15-10:45*	*Had fun being outside ...*	

Figure 4. An Example of a Self-Evaluative Data Collection Instrument for a Student Teacher

Making Sense of Field-Based and Clinical Activities Through Journaling

Reflective journaling is a process by which pre- and inservice teachers can critically reflect upon and document teaching and learning activities (e.g., Harris, 1993; Jumpp & Striebb, 1993; Striebb, 1993). Not only is this type of journaling a useful tool for sharing information

with and obtaining feedback from cooperating teachers, university instructors, and colleagues, but it is also a guide for structuring one's self-directed learning. Reflective journaling can be an ongoing process of documenting one's understanding and use of teaching methods, students' responses to various teaching methods and assessments, thoughts about and reactions to school and district policies, and other reflections of field-based experiences and professional activities. Reflective journaling is especially useful when pre- or inservice teachers want to focus on a particular theory or method to determine its utility in the classroom. Journaling has proven to be a useful method of self-evaluation of preservice or clinical experiences as well as practitioners' professional practice (Moore, 1999; Whipp, 2003). One of the best ways to use reflective journaling is to systematically document field-based experiences to include an objective account of what transpired (including factual information regarding the context and a detailed description of the event or activity), a subjective interpretation of what occurred, and relevance to subsequent field-based experiences or professional activities. See Figure 5 for an example.

Many aspects of research involve some type of reflection and documentation. It is important to understand that reflection of a clinical experience is not sufficient to qualify it as a research strategy. In a researcher's sense, reflection is not simply reminiscing, but is an act of revisiting a thought or action with the intention of seeking multiple levels of understanding. It is an opportunity to ask questions (i.e., What were the strengths and struggles of that activity? What did I and/or the students learn? What can I do differently in the future to garner greater results from that lesson?). Further, while reflection is important, its impact can be increased by taking the time to document those thoughts in a form that can be called upon at a later time. Thus, creating a log or journal to record one's reflections is important. The purpose of reflecting and then documenting one's activities is to create opportunities to identify patterns in activities and to determine what actions lead to which reactions in a particular context. It provides opportunities for pre- and inservice teachers to learn from their own actions, context, and students. It is through systematic reflection and documentation that self-evaluation can become somewhat objective and can provide a springboard for self-directed learning.

Day/ Date	*Time*	*Objective Description*	*Subjective Reflection*	*Relevance*	*Comments*
Today	2:50 pm	As soon as the students were dismissed, they shed their uniforms.	Although students do not gripe about wearing uniforms, they quickly change their attire after school.	In our child development class we discussed the pros and cons about dress codes for public school students ...	This was an after school observation.
Yesterday	11 am	The teacher had a media cart for a Power Point presentation; however, it did not seem as though the teacher was familiar with the cart because it took about 20 minutes to set up.	The teacher did not seem prepared for this activity and the students became restless during the set-up time. Valuable instructional time was lost due to insufficient preparation.	I was excited about incorporating technology into my teaching after the Technology and Teaching course, but now I realize how important prep time is.	During my clinical observations I have seen good and bad teachers. See notes from "That Day" and how that teacher used technology.
That Day	8:30 am-11:15 am	The teacher addressed the topic of pollution in science, math, social studies, and English. The teacher used lots of visual aids including posters, models, and technology.	I really liked how the teacher connected all of the subjects to one central topic. The visual aids enhanced the lessons. The activities were interesting and engaging to the students and me ...	My cooperating teacher emphasized the importance of linking class work to other topics and employing activities that would engage the students.	Begin thinking about what to do for the health class that I will be student teaching.
Another Day	10:00 am-10:50 am	I taught the health education class and introduced the topic of reproduction.	This class was a disaster! The students were not paying attention, and those who were, were giggling. I think I will try Dr. X's curriculum for this section.		My first couple of days of student teaching were going so well, I hope to recover from this experience ...

Figure 5. An Example of Reflective Journaling

Reflective journaling can be coupled with any field-based or clinical experience and has the potential to help develop critical thinking skills. The process of reflection and documentation may allow preservice teachers to have some insight in retrospect that was not apparent at the time of the activity. Prospective teachers may be able to more clearly make a connection between lessons learned in the academy with activities that occurred in the classroom. It can also be an opportunity for pre- and inservice teachers to identify gaps in knowledge and skills that need to be further developed. Reflective journaling should be seen as a call to action. By keeping an ongoing log of the perceived success and struggles of activities, skilled practitioners should eventually be able to identify patterns that should be developed or discarded.

Finally, coupling reflective journaling with any field-based or clinical experience provides a format for helping preservice teachers analyze, interpret, and present their findings. Whether one is required to present findings in an oral or written format or some combination thereof, reflective journaling along with some of the above mentioned field-based activities will help teachers-in-training to logically organize, analyze, interpret, and present their findings. Employing research methods should help presentations of clinical experiences go beyond mere summaries. These types of strategies should help preservice teachers critically look at their training and experiences through various theoretical perspectives while helping them to fine tune their teaching and learning. By viewing these experiences through the lens of research methodology and employing systematic documentation procedures, it is likely that the level of rigor and significance of field-based activities will be noticeably increased and the products will be more meaningful and substantial.

Conclusion: Improving Process and Product Through the Documentation of Field-Based and Clinical Experiences

Federal legislation, national organizations, advocates for professionalization of teacher preparation, and the American people are all concerned with having highly qualified teachers in every classroom. By employing research strategies that require practitioners to develop documentation that will help them think about, structure,

view, and interpret field-based experiences, teacher educators are not only enhancing those activities, but are also contributing to the national goals of developing high quality teachers. And while teacher educators may have good intentions, it may be difficult to convince pre- and inservice teachers of the utility of infusing teacher training activities with research strategies (Moore, 1999; Snell, 2003). Many prospective and current teachers may consider research strategies to be additional and unnecessary skills for educators to learn (Neubert, 1989). Further, some may not see the connection between research and practice, and some may not think that research is conducted or presented with practitioners in mind (Snell, 2003). Thus, teacher educators must not only demonstrate the rationale and power of incorporating research strategies into field-based experiences, but must also demonstrate how basic research skills that culminate in systematic documentation could become invaluable throughout years of professional practice (Cochran-Smith, 2001; Cochran-Smith & Lytle, 1993; Feiman-Nemser, 2001).

There are several reasons why pre- and inservice teachers should use research strategies to help them think about and document their field experiences. Well-structured, field-based experiences, like properly employed research methods, often yield similar results—greater insight into a particular phenomena. In addition, research strategies provide a scientific way by which practitioners can collect empirical evidence to evaluate teaching and learning (Moore, 1999). Further, these strategies allow pre- and inservice teachers to set up their teaching and learning communities in ways that can concretely track the method in which theory is linked to practice (Snell, 2003). These approaches also provide a structured method by which practitioners can compare and share thoughts about teaching and learning with students and their families, colleagues, administrators, district personnel, and policy makers (Neubert, 1989). Finally, research strategies help narrow the gap between teachers and researchers (Cochran-Smith & Lytle, 1993; Snell, 2003).

There is an abundance of support from federal and private agencies for the use of research to advance the national goals of improving the quality of teaching and learning (Coalition for Evidenced Based Policy, 2003; Office of Postsecondary Education, 2005). Teaching preparation programs not only play a critical role in helping educators to access and interpret research, these programs can further

develop educators by helping them to become versed in conducting their own scientific inquiries in the assessment and evaluation of their profession. Although an added bonus to this approach is an increase in the community of teachers engaged in action research, there are more immediate benefits. By adopting this approach, teacher training programs will not only be creating high quality, rigorous standards for field-based and clinical experiences, this approach will also play a major role in developing highly-qualified professional practitioners who have been trained to link theory with practice and apply the scientific method to their inquiries and activities regarding teaching and learning. The infusion of research strategies into field-based and clinical experiences should make a significant contribution to the promise of having highly-qualified teachers educate our nation's children.

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Endnotes

[1] The data collection instruments presented in this paper should be viewed as basic exemplars. They can be adapted to reflect the type and focus of any field-based or clinical experience.

[2] The tables can be driven by what is important to the person who is documenting the data (i.e., in Figures 3, 4, and 5 the data is not presented in chronological order because the theoretical concepts drive the data collection).