Validation of a Formative Student Teaching Performance Assessment: Meeting State Standards

Kirk E. Mathias
Central Washington University

James L. DePaepe
Central Washington University

ABSTRACT

Recent efforts undertaken to improve the quality of teachers in the state of Washington, have resulted in the development of pedagogical performance standards for student teachers. These standards are the result of a collaborative effort between the Washington Association of Colleges for Teacher Education (WACTE) and the Office of the Superintendent (OSPI). These two groups have specifically attempted to create an instrument/standards that would enforce the "No Child Left Behind Act of 2001" and decrease the achievement gap. *Student teachers are required to meet all of the standards while teaching p-12 students. Based on teacher preparation programs and the stage of teacher preparation of student teachers, an intermediary step is deemed necessary to ensure success in meeting the standards. Therefore the purpose of this paper is to 1) describe the Washington Performance Based Assessment; 2) examine the literature related to student teachers' perceptions, beliefs, educational needs, and pedagogical needs; 3) describe the development process and content validation of a formative assessment and its congruence with the state standards; and 4) describe the use and implementation process of the assessment using a laptop.*

INTRODUCTION

Amidst tremendous legislative pressure, the Washington Association of Colleges for Teacher Education (WACTE) and the Office of the Superintendent (OSPI) developed a pedagogy performance based assessment instrument to evaluate student teachers' instructional ability. Efforts were based on Washington Administrative Code (WAC) requirements for teacher certification and fueled by the federal law "No child Left Behind Act of 2001". This instrument is one of several approaches being considered for "closing the achievement gap". The concept of requiring student teachers to successfully complete a summative assessment upon finishing a certified teacher preparation program is not a new concept. Colorado, Arizona, and Arkansas are examples of states that have required teacher candidates to take and pass a written test before becoming endorsed as a teacher. An argument as to the validity of a cognitive assessment for evaluating teaching is justifiable. It might be possible for an individual to demonstrate cognitive knowledge relative to effective teaching on a written test and yet still be unable to commu-

nicate information to the students in a manner, which positively impacts student learning. This argument served as a basis for a changing policy, which resulted in the development of a standards-based teaching performance assessment instead of a cognitive test. Yet, another argument needs to be made with regards to the impact this instrument will have upon student teacher performance. This introduction will argue a need for the endorsement of an intermediary step between preservice learning and the new pedagogy assessment.

The State of Washington Performance-Based Assessment (WPBA) was developed through the collaborative efforts of the WACTE and the OSPI. The WPBA was designed to assess student teachers' teaching performance using a set of 27 standards, which must be met after two formal observations sometime during the student teaching experience. The instrument was piloted in 2001, rewritten in 2002, with final edits in 2003. A two level rubric scoring system was developed during that time. The first level is an "at standard criterion", which student teachers must minimally meet for all standards. The second is a "below standard criterion", which indicates a weakness in teaching performance. Two observations are required of the supervisor during which the student teacher must provide evidence of being "at standard" on all standards. Failure to meet all standards results in failure to meet Washington state teaching certification requirements. Moreover, due to federal legislation, there is a national concern that 'no student is left behind'. Therefore the performance of the student teacher is determined by observing the classroom students' (p-12 pupils') learning, which changes the traditional focus of observing student teacher behavior to observing classroom student behavior. The WPBA instrument demonstrates a significant paradigm shift from observation of a student teacher to the assessment of p-12 student performance, which assumes teacher effect. More dramatically, "all" of the students in the classroom must meet the standards, which assumes no child is being left behind. The WPBAI, when accepted by state legislature, will become the final decisive factor for Washington preservice teachers to gain their teaching certificate, which designates the instrument as a summative evaluation. The instrument is scheduled to go into effect for all preservice teachers graduating from Washington colleges and universities in 2005.

While the WPBA is a tremendous step toward increasing expectations of teacher efficacy, student teachers are only in their second stage of development as teachers (Metzler, 1990; Pajak, 2001). Two concessions must be noted. First, student teaching is one step beyond the initial stage of preservice instruction. Simply stated, these students are neophytes in their teaching skills, and increasing expectations without fully preparing them for the increased expectations is taking a big risk. The 22 teacher education programs in Washington better begin to think differently regarding how to prepare teacher candidates to meet these new expectations. Currently, most of our student teachers have taught few if any actual lessons in real classrooms. Present teacher preparation curricula combined with the WPBA create a potential for student *reality shock*. Reality shock as described by Veenman (1984) is the "collapse of the missionary ideals formed during teacher training by the harsh and contemporary reality of everyday classroom life"(p. 143). Student teachers rarely feel prepared to approach the *"real world"* challenge with an attitude of experimentation but are instead confronted with the "fear of drowning" (Deering, 1985). Consequently, student teachers often do *what it takes* to successfully complete the experience instead of taking advantage of the many available opportunities to improve their teaching skills. Doyle (1985) indicates that student teachers often fall into a teaching level of *survival* as reality shock sets in. Placek & Dodds (1988) reported, student teachers' perceptions about successful teaching are not highly correlated with student learning. Student teachers equate a successful lesson as one in which there was little disruption and off task behavior or a high degree of compliance (Placek & Dodds, 1988). Which brings us to the second concession that student teachers' previously held perceptions about teaching often drive their teaching performance. Student teachers' beliefs and perceptions are heavily influenced by their many

years of classroom experience as a student. In many cases, these neophyte teachers have never experienced, and therefore do not support the concept of assessing student learning as a means to evaluate teaching performance (Matanin & Collier, 2003). This perception does not necessarily match with what research tells us about the need for using authentic assessment, which leads to the improvement of academic performance in students (Newmann, 1996). Little documentation exists showing that student teachers identify teaching success with student learning. Therefore, efforts need to be made that increase student teachers' comfort in their teaching so that they can feel confident in the pedagogical approaches that impact student learning and also in the use of authentic assessments as a strategy to enhance student learning.

Pajak (2001) called for teacher education programs to more "closely couple" preservice learning with the student teaching experience. Coupling becomes even more challenging when state standards are mandated by political praxis, which is the case in Washington. These mandates will change the relationship between supervisors and student teachers creating a very challenging situation for providing feedback to the student teachers. Mandated standards as well as efforts to apply what research tells us has, in the past in some programs, led to successfully revised teacher preparation initiatives e.g., (Koetsier, 1995; Mayer, 2002), changes in supervision (Mayer, 2002; Watson, 1996; Zahorik, 1992) and conferencing strategies (Byra, 1996). Because, the WPBA will increase teacher candidate performance expectations, observation of reality shock will be unmistakable. To overcome this, programs will first need to examine curricualr coherence and more closely couple learning about p-12 student achievement with teacher efficacy. All teacher preparation programs will need to create more opportunities that deflect reality shock. Greater incorporation of real life experiences earlier in candidates' programs of study must be accomplished prior to student teaching. Formative assessment of learning the technical skills of teaching can be accomplished during that time within an atmosphere of development rather than as an ultimate consequence. This change in practice, however, has been held up by a tendency for university programs to use seat time in a university classroom rather than including time for practice with children.

Goldhammer (1969) recommended moving more toward a clinical approach, which also reconceptualized the roles of cooperating teachers and university supervisors. At the time, the model was ill received, however it currently would serve as a new and exciting approach for supervising student teachers and the challenges now facing Washington's teacher preparation programs. The reconceptualized roles are a direct result of the previous ineffectiveness of the triad relationship. The supervision triad consists of the student teacher, a public school or onsite cooperating teacher, and a university supervisor. The traditional assignment of responsibility creates what has been historically called the "Noble triad" (Locke, 1979). However, in most cases, due to lack of communication and the ineffectiveness of the process, the triad has also received acclaims as the "Devil's Triangle" (Locke, 1979). To this regard, little has changed and with the recent mandates the triangle has the potential to add another side, which could turn the triangle into a courthouse. Three contributions to the Devil's triangle include: student teachers being confronted with reality shock and the fear of drowning; cooperating teachers who are recognized as the most influential and most essential are rarely used for observing and providing feedback, and when they are used the training is vague and incomplete (Coleman & Mitchell, 2000; Tannehill & Zakrajsek, 1988); also university supervisors tend to be inconsistent, speculative, and opinioned relative to feedback. Combined with their lack of recent experience in the real world of schooling, "university supervisors credibility is often questioned by schools" (Metzler, 1990, p 8-9). Past studies have concluded that university supervisors have been ineffective in their efforts toward increasing teacher effectiveness of the student teachers (McIntyre & Bird, as cited in Firth & Pajak, 1998; Morris, J. R. 1974; Watson, 1996). However, Locke (1979) indicated, at worst, the data have not demonstrated negative impact on stu-

dent teacher effectiveness. In other words, it does not seem to make a difference whether or not supervisors are part of the triad. New performance expectations on top of all of this, means something programmatically has to change.

Currently, new roles for the cooperating teacher and university supervisor have emerged in the literature. It has been demonstrated that cooperating teachers can be trained to be effective supervisors with a behavioral model of supervision (Coulon & Byra, 1995; Ocansey, 1989). Roles that university supervisors should be filling include; support and empathy for the student teacher (Watson, 1996), facilitating learning to teach and facilitating the reflective practice within the real classroom (Mayer, 2002), overseeing that conceptual framework of the preservice program are met, and training the cooperating teachers in effective instructional supervisory practices (Coulon & Byra, 1995). Accepting these new roles is a timely and needed new avenue for teacher preparation. Consequently, there has been an increase in efforts to more appropriately assign roles based on what is plausible and most influential. Even national accreditation provides impetus for change. The National Council for the Accreditation of Teacher Education (NCATE) standard five, "target level" states, "...All clinical faculty (higher education and school faculty) are licensed in the fields that they teach or supervise and are master teachers or well recognized for their competence in their field" (p. 33). Most programs use university supervisors trained to conduct supervision who have degrees in curriculum and supervision, and are not licensed in the field they supervise.

In summary, there is a need to rethink the student teaching supervision model as well as the preparation prior to student teaching. Much is known about the three participants of the triad. Student teachers define teaching quite differently, and lack comfort in real world teaching. They are also at a very beginning level of teaching and are in tremendous need for mentoring, technical skill practice, and feedback specific to the technical skill development. Cooperating teachers are more than capable of providing appropriate feedback when taught to systematically observe and conference with student teachers. Cooperating teachers also are more readily available to answer questions, offer help, and provide pedagogical modeling for the student teacher when needed. University supervisors have a better understanding of student teacher content knowledge, and can be best used as a facilitator of appropriate systematic supervision. Therefore, the purpose of this paper is to introduce an intermediate assessment, which is formative, accomplished before student teaching, and better prepares candidates for meeting new state standards. In addition, this paper will report the validation process of this new instrument by: 1) describing the *formative* systematic analysis system and its concomitant relationship to the WPBA and the Washington state standards, 2) explaining the validation procedures involved in establishing the instrument, 3) explaining the software tool that is used to simplify the instruments' data collection and interpretation.

INSTRUMENT DEVELOPMENT PROCESS

A preeminent line of research emerged in the 1970s, which identified teaching behaviors recognized as essential to effective teaching (Rosenshine, 1976). Soon to follow was a proliferation of behaviors, which were determined to be minimally necessary for effective teaching (Berliner, 1986). Examples of these behaviors were (daily review, seatwork, homework assignments, (Good and Grouws, 1976) anticipatory set, and modeling (Hunter, 1982) to name a few. Landmark research (Beginning Teacher Evaluation Study) was conducted by the National Institute of Education around a new of set of quantifiable variables, which demonstrated a relationship between teacher effectiveness and student achievement (Fischer et al., 1980). The timing and tallying of teacher and student behaviors were researched as measures for teaching effectiveness, and a plethora of systems were developed and tested (Metzler, DePaepe, and Reif, 1985). The challenges to assess teaching have continued and in recent years, efforts have

been made in the area of developing rubrics representing effective teaching yet, these rubrics are more descriptively tied to pupil standards than to teacher efficacy behaviors.

To begin the validation process, content and pedagogy faculty were gathered for the purpose of defining the behaviors necessary for skill development. The faculty were presented with research concerning the status of supervision and an introduction to the WPBA. At the completion of the presentation, the same faculty examined the state rubric (WPBA) and answered five questions for each 'at standard' rubric. First, could the performance criterion be objectively measured? For example the WPBA identifies the at standard performance level as,'"Students are engaged in activities appropriate to the discipline." The faculty members determined that it would be possible to objectively measure whether students were appropriately engaged or not engaged in activities. This decision was then followed with a defined label of the behavior that was being observed. In this case, the behavior was best termed as "active engaged time".

The second question was, who should be observed? Two potential options were provided, the student teacher (ST) or the pupils (P). The WPBA procedures indicate that only the Pupils of the student teacher are assessed. The student teachers teaching performance then is evaluated in terms of how their pupils perform. The content and pedagogy faculty decided that the new systematic instrument should assess both P and ST behavior since a teacher must first exhibit a behavior before any pupil could perform appropriately. This pretense then helped the group establish definable behaviors for measuring effectiveness along with the concomitant technical skills for learning how to teach.

The third question was, what type of measurement would provide the most meaningful data? Two types of data were determined to be possible for objective measurement. It was decided that time coding and event coding would be used to measure behaviors. Time coding is a method of determining how long a specific behavior occurs within a class period. Event coding is a method of determining the number of times a specific behavior occurs. For example, it was determined that engaged time was best measured with time coding. A high correlation exists between academic learning time (the amount of class time available for learning) and student achievement, therefore determining the time in which pupils are actively engaged in goal directed learning activities might lead to a statistically based determination of ST impact on P learning.

Is the behavior instructional or managerial was the fourth question? Knowing that increased academic learning time increases achievement, the behaviors were categorized as to whether they contributed to learning of the lesson's objective. In cases where the behavior would enhance learning, the category of *instructional* was assigned and in cases where the behavior took away from learning time, the category *management* was assigned. Active engaged time was deemed as an appropriate learning task and therefore is categorized as instructional.

The final question was, what does this behavior look like? Answering this question led to an operational definition and example of each behavior. To ensure reliable use of the instrument's definitions, descriptions were written as simple as possible. Active engaged time was defined as "anytime that the students actively pursue information and concepts related to the specific Educational Academic Learning Requirements (EALRs) of the lesson."

The EALRs are standards for K-12 students mandated by Washington's Office of Superintendent of Public Instruction. Once defined, a detailed statement including examples as to what this definition might look like was created. The examples clarified definitions and reduced the potential for individual assessor interpretation. (See Table 2 for a full list of behaviors, definitions and measurement characteristics.) After applying these questions to each standard located within the 'At standard' level of performance a total of 18 behaviors were developed (ten teacher and eight student behaviors). In cases where several standards could be measured within one behavior, duplicate behaviors were not created. A list of these behaviors, definitions, the WPBA criterion they match, the measurement tech-

nique, and who is being observed are included in Table 2.

Upon completion of the standard matching process with development of the objective behaviors, a computerized tool was adapted for the purpose of data collection. The computerized tool is designed to collect data on teaching, categorize data into the appropriate categories, and provide visual displays of the results (See Figures 1-4). Decisions were then made as to the appropriate applications of the data collection process. A comparison/contrast is provided below for explaining the similarities and differences of the two instruments (See Table 3).

FIGURE 1

Opening screen in STEPS showing custom behavior selection

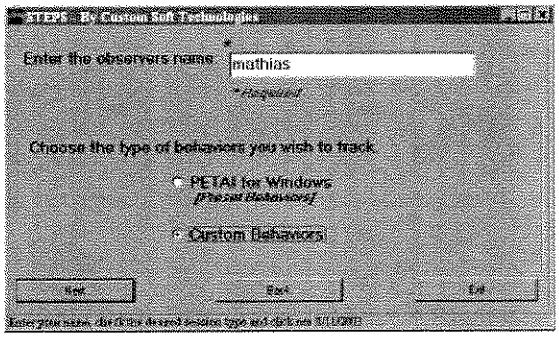


FIGURE 2

Behavior selection process for coding session

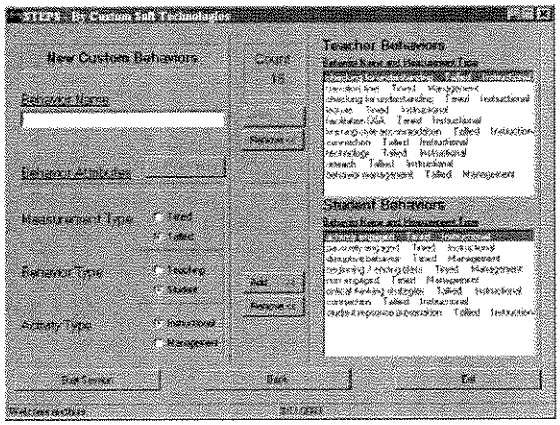


FIGURE 3

Buttons for behaviors by category

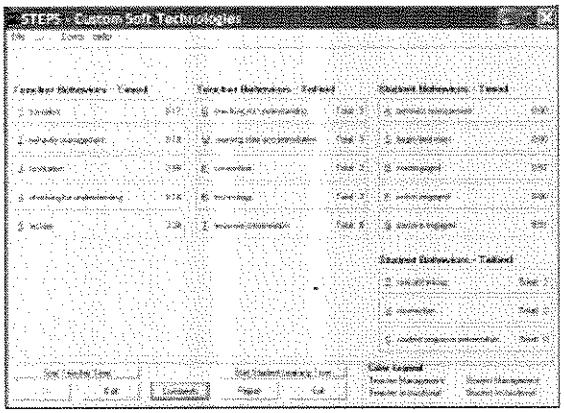


FIGURE 4

Behavior events generated report on timeline

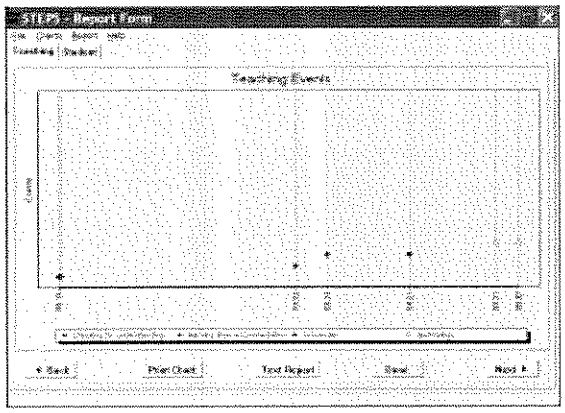


TABLE 1

Questions Solved in Matching Standards of WPBAI

1. Did the performance criterion lend itself to being objectively measured?
2. Who should be observed for this behavior?
3. What type of measurement would provide the most meaningful data?
4. Is the behavior that is measured instructional in nature or managerial?
5. What does the behavior look like?

TABLE 2

Matching Washington state performance standards with systematically assessed behaviors in the CTL-ATP

Behavior	Definition	Washington State Pedagogy Performance Standards	Objective Data Collected by
Checking for understanding	Anytime a teacher determines whether students understand the learning targets or prior knowledge in relation to the planned tasks.	Students work on assignments with understanding of the learning targets.	Observed: Teacher Record: Total Amount of TimeRecord: Number of eventsCategory of Behavior: Instructional
Facilitation, Q&A	Anytime the students are acquiring necessary and relevant information for them to meet the lesson objective successfully.	Anytime the students are acquiring necessary and relevant information for them to meet the lesson objective successfully.	Observed: Teacher Record: Total Amount of TimeCategory of Behavior: Instructional
Reteach	Any instruction that encompasses prior knowledge remedially.	Students work on assignments based on their prior knowledge, demonstration of prerequisite skills, and ability to perform the requirements of the task.	Observe: TeacherRecord: Number of EventsCategory of Behavior: Instructional
Lecture	Anytime the teacher is presenting information to the students in the absence of student interaction.	Students are learning the key skills and concepts needed to reach the learning targets.	Observe: TeacherRecord: Total Amount of TimeCategory of Behavior: Instructional
Behavior Management	Disruptive action that takes away from the educational environment.	Students interact in a respectful manner and use the classroom environment.	Observe: TeacherRecord: Total Amount of TimeCategory of Behavior: Management
Transition	The time in which the teacher is getting the students started or moving from one activity to another.	Students move between learning tasks in an efficient manner.	Observe: TeacherRecord: Total Amount of TimeCategory of Behavior: Management
Learning style accommodation	A variety of instructional approaches or learning activities are used to meet individual abilities.	Students process new skills and concepts using strategies reflecting their diverse learning approaches and multiple academic abilities.	Observe: TeacherRecord: Number of EventsCategory of Behavior: Instructional
Connection	Anytime the students participate in tasks infused with personal interest based on the students' relevant community and cultural relevancy connecting to the learning target	Students engage in tasks that are personally meaningful and culturally relevant.Students can articulate how the tasks will help them reach learning targets.	Observe: TeacherRecord: Number of EventsCategory of Behavior: Instructional
Technology presentation	Appropriate use of technology to meet the learning target.	Students learn through varied and engaging technologies.	Observe: TeacherRecord: Number of EventsCategory of Behavior: Instructional
Connection / Constructivist	Anytime the students participate in tasks infused with personal interest based on the students' relevant community and cultural relevancy connecting to the learning target	Students engage in tasks that are personally meaningful and culturally relevant.Students can articulate how the tasks will help them reach learning targets.	Observe: StudentRecord: Number of EventsCategory of Behavior: Instructional
Non engaged	Any time the students are not involved in the classroom environment (must be nondisruptive).	Students are productively engaged in learning tasks.	Observe: StudentRecord: Total Amount of TimeCategory of Behavior: Management

TABLE 2 (cont.)

Actively Engaged	Anytime that the students actively pursue information and concepts related to the specific EALR's of the lesson.	Students are engaged in opportunities to learn concepts in the plan.Students are engaged in activities appropriate to the discipline.Students engage in tasks that help them reach the learning targets.Students engage in a variety of learning tasks, such as direct, indirect, cooperative, heterogeneous, and independent activities that build and recognize academic competence.Students engage in assessments that measure their performance relative to the learning targets	Observe: StudentRecord: Total Amount of TimeCategory of Behavior: Instructional
Passively Engaged	Any time the students actively pursue information and concepts related to specific EALR's of the lesson.	Students are learning the key skills and concepts needed to reach the learning targets.	Observe: StudentRecord: Total Amount of TimeCategory of Behavior: Instructional
Disruptive Behavior	Disruptive action that takes away from the educational environment.	Students interact in a respectful manner and use the classroom environment.	Observe: StudentRecord: Total Amount of TimeCategory of Behavior: Management
Beginning / Ending Class	Any time the teacher is getting class started or ending with non-instructional (NOT directly related to the behaviors) information.	Students move between learning tasks in an efficient manner.	Observe: StudentsRecord: Total Amount of TimeCategory of Behavior: Instruction
Critical thinking strategies	Anytime the student experiences success through articulation within the parameters delineated by the problem.	Students use a variety of strategies to solve problems, have time to contemplate dilemmas alone and with others and can articulate how they came to their conclusion.	Observe: StudentRecord: Number of EventsCategory of Behavior: Instructional
Student response presentation	An appropriate verbal or written articulation of the relationship between the task and the learning target.	Students are productively engaged in learning tasks and are empowered to give input to their own learning experiences and to other students in their learning community.	Observe: StudentRecord: Number of EventsCategory of Behavior: Instructional

TABLE 3

A comparison and contrast between the WPBA and the CTL-ATP

WPBA	CTL-ATP
• Performance-based	• Performance-based
• Assess teacher effectiveness	• Assess teacher effectiveness
• Concern that no students are left behind	• Concern that no students are left behind
• Observation of student behaviors	• Observation of student & teacher behaviors
• Impact on student learning through subjective observation	• Impact on student learning through objective observation and statistical analysis
• Teachers meet standards if students meet standards	• Teachers assessed by improving student academic learning time
• Summative	• Formative

VALIDATION PROCESS

Prior to development of the instrument, applicable literature was researched and reviewed. This provided the impetus for the development of the instrument and guided the procedural process. After completion of the original coupling of measurable behaviors with the state instrument with the assistance of university content and pedagogy faculty; it was submitted to school-based cooperating teachers for feedback. Comments concerning the viability and validity of the instrument in the real environment were adopted as a part of the assessment. Faculty representatives (from MN, SC, CA, WA, and Northwest Regional Educational Laboratories) received an in depth presentation during a collaborative exchange, from which feedback was also ascertained. This led to three requests by representatives for copies of the instrument for incorporation into their teacher preparation programs. The coordinator for Central Washington University's state pedagogy assessment was provided an opportunity to review and provide feedback as an ongoing effort to establish a strong link with the state pedagogy assessment. The instrument was also presented at the Northwest Laboratory Regional Convention to University faculty, public school administrators, and teachers for further feedback used for content validation. Finally, the instrument was presented to a group of attendees at the annual Northwest Association for Colleges of Teacher Education and asked to fill out a survey providing written feedback relative to the instruments content and procedures.

USE OF THE INSTRUMENTS (COMPARISON/CONTRAST)

Washington Performance Based Assessment - WPBA

The WPBAI is designed as a rubric with two levels of performance. Level one is below standard, level two is at standard. Student teachers are expected to be minimally, at standard for all standards during two visits at the end of the student teaching process. The instrument is allowed but not recommended to be used throughout the student teaching process. Additionally, the criterion is determined by observing all students not the teacher. Consequently, ST are not at standard unless all of the P in their class meet the standard. For example, the first standard: "students work on assignments with understanding of the learning targets" would indicate that the lessons are designed so that *all* students in the class are working on assignments with an understanding of the learning targets. If one student is not working on the assignment with an understanding of the learning target, the ST would not be at standard and meet the WPBA criterion.

CENTER FOR TEACHING AND LEARNING – ASSESSMENT FOR TEACHER PERFORMANCE (CTL-ATP)

The CTL-ATP includes 18 behaviors directly tied to the 27 behaviors of the WPBAI, which can be objectively and systematically measured. It is designed so that objective measurements can be used to establish meaningful instructional goals, whereby the ST gradually will become more effective in the technical skills of teaching. Instructional goals are gradually increased during the student teaching experience resulting in a ST who is more effective than at the beginning of the experience. Use of the instrument begins with the selection of three students who have been identified to represent all levels of the learning spectrum (high, medium and low). Selection of the various levels provides an impetus to profile the class as a whole including all learners. The focus is on the ST as well as the Ps. From this work, we believe effectiveness can be best assessed by understanding both ST behaviors and P behaviors, as well as the point the two tersect (the SP interaction). At the completion of the lesson, the objective data is summarized in reports that provide meaningful information that can enhance the effectiveness of the feedback and overall student teacher/supervisor post conference session.

USING THE CTL-ATP

Directions for using the CTL-ATP

Before the observation begins, an observer should (with the help of the student teacher) identify three students that represent the various levels of students in the class ranging from high achieving students to low achieving students. An observer must observe each student for two minutes always in the same order throughout the entire class. This provides a systematic and accurately sampled profile of what the whole class is doing. The ST should be observed simultaneously. Since the assessment has been designed to collect data through a computerized systematic analysis tool, the computer must be prepared. Opening the computerized tool and assuring that all behaviors have been selected and put on the screen is essential. The information is then automatically organized into reports that should be evaluated and synthesized to identify those areas of greatest need and greatest potential for improving (See Figures 1-4). The data collected are to be used as a guide to provide correctional strategies that are based on student learning goals and the most appropriate method of teaching relative to those goals for the class observed.

Using the computerized tool

The computerized tool requires you to open and enter a file name. In order to run this tool, a custom session must be chosen (See Figure 1). In the next screen, all appropriate behaviors must be selected and moved to the appropriate windows for measurement (See Figure 2). All behaviors in the instrument must be selected and added to the viewing session in order to be coded.

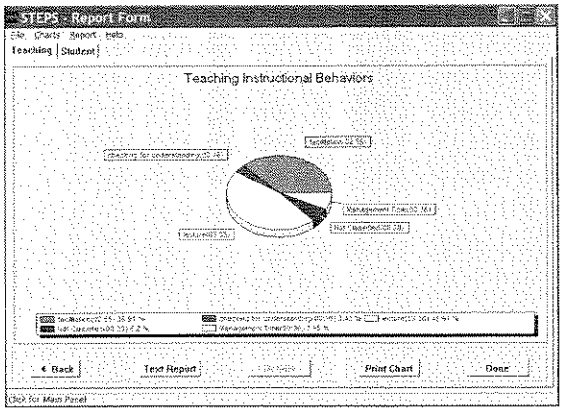
When class begins, the correct timers should be clicked to start timers. It is crucial to start a ST and P time coded behavior simultaneously. Each time the ST or P begin exhibiting a different behavior, the new behavior is selected by a simple point and click method using a mouse. The computer automatically adjusts for the new behavior. For example, if the teacher begins class with a checking for understanding statement, the observer would move the mouse over the teacher behavior that says 'checking for understanding' and the left mouse button should be clicked. The timer immediately begins tracking the length of time for the teaching behaviors. If a teacher then begins lecturing, the left mouse button should be clicked after the arrow is placed over the button that says' 'lecture'. This continues with both teacher and student behaviors until the class is dismissed, at which the button, 'stop timer' should be clicked.

Reports are then generated on the specific behaviors based on when, how many, or how long the behaviors were used during this class. The information then presents an opportunity to develop realistic and objective goals for future lessons as well as the instructional strategies necessary for successful attainment of these goals.

The funding for the research, development, and validation of this instrument was part of a federal U.S. Department of Education PT3 (Preparing Tomorrows Teacher to use Technology) grant. This current year the authors will be collecting data on the relationship between teaching behavior and pupil achievement in the high school disciplines of science, math, and health and fitness. Upon request of the authors, the CTL/ATP CD will be sent to any teacher preparation faculty member who for the purposes of research or instruction would like to use the instrument.

FIGURE 5

Pie chart generated report for timed teaching behaviors



REFERENCES

Berliner, D. C. (1986). In pursuit of the expert Pedagogue. Educational Researcher, August/September, 5-13.

Byra, M. (1996). Postlesson conferencing strategies and preservice teachers' reflective practices. Journal of Teaching in Physical Education, 16(1), 48-65.

Coleman, M. M. & Mitchell, M. (2000). Assessing observation focus and conference targets of cooperating teachers. Journal of Teaching in Physical Education, 20, 40-54.

Coulon, S. C. & Byra, M. (1995). Improve student teaching experiences: Develop a statewide communication network. Journal of Physical Education, Recreation and Dance, 66(2), 51-55.

Deering, T. E. (1985). Student teaching: a positive learning experience? College Student Journal, Spring, 114-116.

Doyle, W. (1985). Effective teaching and the cncept of master teacher. Elementary School Journal, 86(1) 27-33.

Fisher, C. Berliner, D., Filby, N. Marliave, R., Cahen, L. & Dishaw, M. (1980). Teaching behaviors, academic learning time, and student achievement: An overview. In C Denham & A. Lieberman (Eds.) Time to Learn (pp.7-32). Washington D.C: National Institute of Education.

Firth, G. R. & Pajak, E. F. (Eds.) (1998). The handbook of research on school supervision. New York: Simon & Schuster Macmillan.

Goldhammer, R. (1969). Clinical supervision: Special methods for the improvement of teachers. New York: Holt, Rinehart & Winston.

Good, T. L. & Grouws, D. A. (1979). Teaching and matematics learning. Educational Leadership, 37(Fall), 39-45.

Hunter, M. (1982). Mastery teaching, El Segundo, CA: TIP Publications.

Koetsier, C. P. (1995). Bridging the gap between initial teacher training and teacher induction. Journal of Education for Teaching; International Research and Pedagogy, 21(3). 333-346.

Locke, L. (1979). Supervision, schools, and student teaching: Why things stay the same. Paper presented at the American Academy of Physical Education, New Orleans.

Matanin, M. & Collier, C. (2003). Longitudinal analysis of preservice teachers' beliefs about teaching physical education. Journal of Teaching in Physical Education, 22, 153-168.

Mayer, D. (2002). An electronic lifeline: information and communication technologies in a teacher education internship. Asia-Pacific Journal of Teacher Education, 30(2), p. 181-195.

Metzler, M., Depaepe, J., and Reif, G. (1985). Alternative technologies for measuring academic learning time in physical education. Journal of Teaching Physical Education, 4 (1), p. 272-285.

Metzler, M. (1990). Instructional Supervision for Physical Education. Champaign, IL; Human Kinetics.

Morris, J.R. (1974). The effects of the university supervisor on the performance and adjustment of student teachers. Journal of Educational Research, 67(8), 358-362.

Newmann, F. M. (1996). Authentic pedagogy and student performance. American Journal of Education, 104(4) 280-312.

Pajak, E. (2001). Clinical Supervision in a standards-based environement. Journal of Teacher Education, 52(3), 233-243.

Placek, J. H. & Dodds, P. (1988). A critical incident study of preservice teachers' beliefs about teaching success and nonsuccess. Research Quarterly for Exercise and Sport, 59(4), 351-358.

Rosenshine, B. (1976). Recent research on teaching behaviors and student achievement. Journal of Teacher Education, 27(1),61-64.

Tannehill and Zakrajsek (1988). Student as socializing agent. Journal of Teaching in Physical Education, 1, 71-79.

Veenman, S. (1984). Perceived problems of beginning teachers. Review of Educational Research, 54(2), 143-178.

Watson, D. (1996). The effect of university supervision on the teaching practices of student teachers: Considerations for an alternative supervision model. Paper presented at the University of Utah, Salt Lake City, UT.

Zahorik, J. A. (1992). Good teaching and supervision. Journal of Curriculum and Supervision, 7(4), 393-404.

ACKNOWLEDGEMENTS

Special thanks to the following people who provided valuable insight as to specific behavior development, testing, use of the final instrument, and feedback in the process; Ken Briggs, Jan Bowers, Martha Kurtz, Mary Lochrie, Mark Oursland, Barbara Phillips Andrea Sledge, Shari Stoddard, & Steve Wagner. Also thanks to Steve Schmitz and Dean Rebecca Bowers for providing valuable insight in the development of this manuscript.

Dr. Kirk E. Mathias is an associate professor of HHPR in the Dept. of Physical Education, Health Education, Leisure Services, Central Washington University, Ellensburg, Washington 98926-7572. Email: Kirk.Mathias@cwu.EDU

Dr. James L. DePaepe is Director of the Center for Teaching & Learning, Central Washington University, Ellensburg, Washington 98926-7415. Email: James.Depaepe@cwu.EDU