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ABSTRACT

This study examined the validity and reliability of a newly developed instrument for performance assessment of teachers. The instrument was based on the "framework for teaching" proposed by C. Danielson, a framework that identifies the aspects of a teacher's responsibilities that have been documented through empirical studies and theoretical research as promoting student learning. The University Supervisor's Evaluation Report (USER) was developed based on 22 components in the 4 domains of Danielson's framework. Two slightly modified instruments, the Student's Self-Report and the Cooperating Teacher's Evaluation Report (CTER), were developed for the purpose of validation. A panel of 23 members, including students, cooperating teachers, and university supervisors, was asked to evaluate the contents of each instrument in relation to the four domains of Danielson's framework. Thirty-three complete data sets were collected from student teachers and their cooperating teachers and university supervisors. In general, the internal consistency reliability within each domain was reasonably high except for domain 4 of the CTER. The interrater reliability was also high, as scores among students, cooperating teachers, and university supervisors were consistent. Some items, however, were deemed not suitable after careful examination, and these may be eliminated from the instrument. Overall, the new instrument was found to have high content validity and construct validity, but the concurrent validity comparing the existing assessment tool with the newly developed instrument was low. The existing instrument had never been validated, and may not have been appropriate for evaluating student teacher competence. Appendix A contains Danielson's framework, and Appendix B contains the instrument. (SLD)

Development and Validation of Student Teaching Performance Assessment Based on Danielson's Framework for Teaching

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Development and Validation of Student Teaching Performance Assessment

Based on Danielson's Framework for Teaching

Introduction

The educational goal of the Department of Education and Special Education at a rural university in Pennsylvania is to prepare effective teachers. As American society becomes a technology-based culture based on information and communication, requirements for the preparation and certification of teachers are changing from a time-based, course-completion model of teacher education to one with performance-based standards. More emphasis is being placed on the quality of teacher candidates' work, their subject matter knowledge, and their demonstrated teaching skills (Brucklacher, 1999). This rural Pennsylvania state university has responded to such increasing demands, by tailoring their teacher education programs to ensure that all pre-service possess a strong foundation of content knowledge, as well as the ability to apply their knowledge in authentic teaching situations.

Both the National Council for Accreditation of Teacher Education (NCATE) and the Pennsylvania Department of Education (PDE) adopted new standards that require all member universities to carefully assess the performance of their candidates and graduates (<http://www.pde.psu.edu/> & <http://www.ncate.org/>). In the revised standards, program evaluation will be driven by the quality of the assessments used. Both NCATE and PDE emphasize and reinforce performance-based outcomes for prospective teachers and recommend a program focus on performance in the classrooms of the public schools.

In order to meet changing NCATE and PDE standards, our Education department is in the process of implementing changes to the curriculum based on "the framework for teaching" proposed by Charlotte Danielson. This framework for teaching identifies those aspects of a teacher's responsibilities that have been documented through empirical studies and theoretical

research as promoting improved student learning (Danielson, 1996). For example: *The Scientific Basis of the Art of Teaching* (Gage, 1977) and *Handbook of Research on Teaching* (Wittrock, 1986). Those responsibilities seek to define what teachers should know and be able to do in the exercise of their profession. In this framework, the complex activity of teaching is divided into 22 components clustered into four domains of teaching responsibility: 1) planning and preparation, 2) classroom environment, 3) instruction, and 4) professional responsibilities (Danielson, 1996) (See Appendix A).

Given the changing nature of goals in education, the imperfect nature of assessment, and the difficulties of social research, few studies that yield definitive answers to what instructional approaches maximize student learning exist (Danielson, 1996). Therefore, this “framework for teaching” possesses limitations resulting from the disparities that exist in the educational community regarding educational goals, assessment, and control of extraneous variables in educational research.

Firstly, appropriate educational goals are difficult to define. Policy leaders and educators present an argument that the goals and standards for education over the past 100 years have not been rigorous enough (National Board for Professional Teaching Standards, 1991). Current state and district goals are attempts to respond to the raising standards and increasing demands. But, members of the educational community still have not reached a consensus on what educational goals will be most effective in preparing students for the challenges of today and tomorrow.

Secondly, assessment measures currently used in educational research are inadequate for determining the comparative effectiveness of different approaches to teaching and learning. Valid and reliable assessments are urgently needed for the new generation of instructional goals. Until researchers have these measures, they cannot conduct credible research on the effectiveness of alternative approaches.

Thirdly, extraneous variables in educational, as well as social research, are difficult to control. For a clean research design, both the students and the teachers involved in the research and assigned to the experimental and control groups must be comparable. Difficulties are evident when one considers the fact that the random assignment of teachers will indefinitely place some teachers in groups that require the use of approaches they do not support. Extraneous variables such as these complicate a determination of what approaches are indeed most effective.

Despite these circumstantial limitations, Danielson's "framework for teaching" provides support for teachers, by guiding their on-going efforts to provide students with the academic knowledge and social faculties necessary for current and future success. In addition, a new paradigm for learning and teaching has been developed to meet the demands of the present and future. Traditional views of learning focused on knowledge and procedures of low cognitive challenge and the regurgitation of superficial understanding. Gradually, this view has shifted to a constructivist approach of learning (and teaching).

Recently, educators and policymakers have been speaking of the philosophy of constructivism and a constructivist approach to teaching and learning. But, this movement is not new. Since the early 20th century, the cognitive approaches rooted in the philosophy of constructivism have competed for attention with behaviorist orientations (Danielson, 1996). The philosophy of constructivism supports the notion that people's understanding of any concept depends entirely on their mental construction of that concept (Danielson, 1996). Although teachers can guide the learning process, students must assume the responsibility of managing the process and developing an understanding for themselves.

In response to the changing NCATE and PDE Standards, Charlotte Danielson's "framework for teaching" was adopted and the constructivist philosophy of learning (and teaching) was implemented throughout all courses and field experiences in the Education

program at this University. To evaluate the effectiveness of the program under a curriculum change, a reliable and valid assessment instrument is essential. The purpose of this study is to newly develop and validate a performance-based instrument.

Method

Development of Instrument

A "University Supervisor's Evaluation Report (USER)" was developed based on 22 components within the 4 domains of Danielson's framework. Within each component, several related statements were indicated to provide a more objective rating criterion. This instrument is using a 4-point Likert Scale, ranging from least competent to highly competent, and consists of 22 items within 4 domains. In addition, two slightly modified instruments, namely, "Student's Self-Report" (SSR) and "Cooperating Teacher's Evaluation Report" (CTER), were also developed for the purpose of validation. (See Appendix B)

Procedures

A panel of 23 members including students, cooperating teachers and university supervisors were asked to evaluate the contents of each instrument in relation to the four domains of Danielson's framework. Data was collected to examine content validity. A total of 56 student teachers, enrolled in the Elementary Education, Secondary Education, and Special Education programs, were recruited. At the end of student teaching, the students, cooperating teachers, and university supervisors completed the SSR, CTER and USER respectively, in regards to the student teacher's competency. A total of 33 complete data sets were collected at the end of the student teaching semester.

Analysis

The validity and reliability of the 3 instruments were tested. Content validity was determined from the percent agreement across a panel of 23 experts, who were asked to judge

whether or not the statements were valid measures of the specific components. Concurrent validity was established by correlating the ratings on the USER and the student teachers' grades (GRADES), assuming that the student teaching grade was valid. Additional analyses also examined the correlation between the USER and student Quality Point Average (QPA), and the correlation between GRADES and QPA. Confirmatory factor analysis using Linear Structural Relations (LISREL) statistical software was performed to examine the construct validity of the USER. Convergent and discriminant validity using multi-trait multi-method (3 instruments, 4 domains) was also examined. Internal consistency reliability using SPSS statistical software was performed to examine the instrument reliability. Inter-rater reliability was determined by the score consistency between USER and CTER, USER and SSR, and CTER and SSR.

Results

Content validity of 96% agreement was found for the USER instrument (N=23). (See Table I). The correlation between the USER and the student teaching grade (GRADES) is significant (N=33, $r=.453$, $p=.02$). No significant correlation was found between the USER and QPA ($r=.077$, $p=.676$), or between GRADES and QPA ($r=-.123$, $p=.558$).

Confirmatory factor analysis indicated that the model fit (the instrument contained 4 domains, normed fit index (NFI) = .89, comparative fit index (CFI) = 1.00, goodness fit index (GFI) = .91). Table II shows the multi-trait multi-method correlation matrix comparing the USER, CTER, and SSR on all four domains. It also shows internal consistency reliability of all three instruments. The convergent validity is higher than the discriminant validity except for domain 2. The correlations within each domain were higher than .84 for the USER and the CTER, but lower for the SSR. All of the convergent correlation coefficients were significant ($p<.01$).

Internal consistency reliability of the USER for each domain ranged from .8384 (N=32

Domain 2) to .9310 (N=20, Domain 4), with Domain 1 (N=33, $r=.9097$) and Domain3 (N=32, $r=.8514$) in the middle. No significant differences were found between the SSR and USER, SSR and CTER, or USER and CTER, which indicates that students' self evaluations were consistent with their cooperating teachers' and university supervisors' evaluations.

Discussion

This study examined the validity and the reliability of a newly developed instrument for performance assessment of student teachers. In general, the internal consistency reliability within each domain was reasonably high except for the CTER, domain 4. The inter-rater reliability was also high, as the scores among students, cooperating teachers, and university supervisors were consistent. However, after carefully examining each item, some items were not suitable. For example, item 4C "Communicating with families" was not applicable to our student teachers. Perhaps this item should be eliminated.

The new instrument was found to have high content validity and construct validity. However, the concurrent validity comparing the existing assessment tool with the newly developed instrument was low. The existing instrument was never validated, and thus may not be appropriate for evaluating student teacher competency. Another interesting finding revealed low correlation between the USER and QPA. This may suggest that students who know content (high QPA) do not necessarily know how to teach.

This study presents certain limitations. Since this study is preliminary, a small number subjects were recruited. The preliminary analyses only provided limited information about the instrument. A large data set is necessary for the validation of the instrument. Further research should be done in revising items and recruiting more subjects.

As the standards of NCATE and PDE change towards a more performance-based assessment, a few universities have initiated the development of assessment tools based on

Danielson's framework. (e.g. Slippery Rock University). However, these instruments have not been quantitatively validated. The validation of this instrument not only provides a valid and reliable assessment of our student teachers, but also provides an example for other teacher preparation institutions, as a partial reference for their program evaluation efforts.

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Table I

Content Validity of University Supervisor 's Evaluation Report (N=23)

Domain	Component	Agree (%)	Disagree (%)
1. Planning and Preparation	a. knowledge of content and pedagogy	100	0
1.	b. demonstrating knowledge of students	100	0
1.	c. selecting instructional goals	100	0
1.	d. knowledge of resources	91.3	8.7
1.	e. designing coherent instruction	100	0
1.	f. assessing student learning	100	0
2. The Classroom Environment	a. environment of respect and rapport	95.65	4.35
2.	b. establishing a culture for learning	95.65	4.35
2.	c. managing classroom procedures	91.3	8.7
2.	d. managing student behavior	95.65	4.35
2.	e. organizing physical space	86.96	13.04
3. Instruction	a. communicating clearly and accurately	100	0
3.	b. questioning and discussion techniques	100	0
3.	c. engaging students in learning	95.65	4.35
3.	d. providing feedback to students	100	0
3.	e. flexibility and responsiveness	100	0
4. Professional Responsibilities	a. reflecting on teaching	100	0
4.	b. maintaining accurate records	100	0
4.	c. communicating with families	82.61	17.39
4.	d. contributing to the school and district	91.3	8.7
4.	e. growing and developing professionally	95.65	4.35
4.	f. showing professionalism	95.65	4.35

Table II

Multi-Trait Multi-Method Correlation Matrix Comparing USER with CTER & SSR on All Four Domains and the Internal Consistency Reliability

	SU1	SU2	SU3	SU4	SS1	SS2	SS3	SS4	CT1	CT2	CT3	CT4
SU1	(.91)											
SU2	.83	(.84)										
SU3	.85	.80	(.85)									
SU4	.90	.89	.82	(.93)								
SS1	.62	.55	.55	.60	(.77)							
SS2	.49	.45	.29	.54	.68	(.85)						
SS3	.54	.38	.51	.51	.76	.70	(.73)					
SS4	.49	.53	.47	.47	.81	.66	.64	(.75)				
CT1	.74	.64	.71	.68	.69	.68	.73	.68	(.89)			
CT2	.49	.47	.43	.50	.58	.80	.69	.70	.85	(.85)		
CT3	.60	.54	.70	.54	.51	.50	.66	.49	.91	.80	(.86)	
CT4	.64	.58	.60	.68	.72	.74	.80	.68	.84	.83	.77	(.27)

All convergent validity is significant ($p < .01$, two tails)

SU: Supervisor's Report;

SS: Student Self Report

CT: Cooperating Teacher's Report

Numbers: indicate domains

Internal consistency reliability is indicated in ()

Convergent validity is indicated in bold

APPENDIX A

**Charlotte Danielson’s “framework for teaching”
Components of professional practice**

Domain 1: Planning, Preparation, and Assessment

- 1a: Demonstrating knowledge of content and pedagogy
- 1b: Demonstrating knowledge of students
- 1c: Selecting instructional goals and objectives
- 1d: Demonstrating knowledge of resources for teaching and for students' use
- 1e: Designing coherent instruction
- 1f: Assessing student learning

Domain 3: Instruction and Communication

- 3a: Communicating clearly and accurately
- 3b: Using questioning and discussion techniques
- 3c: Engaging students in learning
- 3d: Providing feedback to students
- 3e: Demonstrating flexibility and responsiveness

Domain 2: The Classroom Environment

- 2a: Creating an environment of respect and rapport
- 2b: Establishing a culture for learning
- 2c: Managing classroom procedures
- 2d: Managing student behavior
- 2e: Organizing physical space

Domain 4: Professional Responsibility

- 4a: Reflecting on teaching
- 4b: Maintaining accurate records
- 4c: Communicating with families
- 4d: Working in and contributing to the school and district
- 4e: Growing and developing professionally
- 4f: Showing professionalism

APPENDIX B

FRAMEWORK FOR TEACHING SUPERVISOR'S EVALUATION OF STUDENT TEACHER

Student Teacher _____ ID# _____

Month/Day/Year _____ Grade/Subject _____

As the student teacher's advisor, please rate your student teacher's performance by circling the number that best characterizes his/her abilities in each component. Use the following scale:
(weak evidence) 1 – 2 – 3 – 4 (strong evidence)

Feel free to write comments in the space available to the right.

Please rate your student teacher's performance by circling the number that best characterizes his/her performance in each component. Use the following scale: (weak evidence) 1 – 2 – 3 – 4 (strong evidence)

Feel free to write comments in the space available to the right. It is your discretion whether the item is applicable to your student teacher. Please circle NA if you believe the item is not applicable. In addition, some of the statements under each heading may not be applicable while others are, student teacher need not demonstrate all of them to receive a "4". Once you complete your evaluation, please total your score in the box provided. Thank you.

Domain 1: Planning, Preparation, and Assessment

Components:

1a: Demonstrating Knowledge of Content and Pedagogy 1 2 3 4 NA

- Applies accepted learning principles
- Prepares for and knows assigned content
- Writes lesson plans that contain accurate information
- Identifies common student misconceptions and likely sources of error
- Selects teaching techniques appropriate to students' ability levels and the content
- Makes reference to relevant school, district, state and national standards in lesson plans
- Answers student questions with accurate information
- Communicates content in ways students can understand

1b: Demonstrating Knowledge of Students 1 2 3 4 NA

- Employs principles of human growth and development
- Shows understanding of and sensitivity to community and cultural norms
- Shows sensitivity to student needs
- Becomes familiar with what students know and can do
- Becomes familiar with what interests students
- Values the resources individual students bring to the classroom

1c: Selecting Instructional Goals and Objectives 1 2 3 4 NA

- Analyzes needs of diverse learners
- Identifies important concepts and skills
- Writes clear instructional goals and expressive objectives
- Matches goals and objectives to students' ability levels
- Writes goals and objectives that correspond to viable methods of assessment
- Provides a rationale for planning and instructional decisions

1d: Demonstrating Knowledge of Resources for Teaching and for Students' Use **1 2 3 4 NA**

- Uses school and district resources
- Uses technology to locate and obtain resources
- Visits libraries and other community organizations for resources
- Is willing to find non-traditional resources outside immediate district or community

1e: Designing Coherent Instruction **1 2 3 4 NA**

- Plans thoroughly and consistently
- Meets students' current needs and leads into the next level of learning
- Selects appropriate instructional groups based on students' abilities and needs
- Uses a variety of instructional techniques and materials
- Designs activities that represent relevant and authentic applications of knowledge
- Incorporates students' interests into lessons
- Organizes necessary materials, supplies, and equipment
- Develops long-term instructional sequences

1f: Assessing Student Learning **1 2 3 4 NA**

- Selects or designs appropriate formal/informal assessment materials
- Adjusts assessment methods for varying students' needs and abilities
- Articulates congruence of assessment methods with instructional goals and objectives
- Clearly communicates criteria and standards to students
- Uses assessment results in planning subsequent instruction
- Documents student progress
- Utilizes techniques for student self-assessment

Domain 2: The Classroom Environment

Components:

2a: Creating an Environment of Respect and Rapport **1 2 3 4 NA**

- Respects and values individual differences
- Relates positively to students (e.g. warmth, caring, respect)
- Shows concern for students
- Establishes appropriate rapport with students
- Encourages responses and interactions that foster positive (e.g. polite and respectful relationships among students)

2b: Establishing a Culture for Learning **1 2 3 4 NA**

- Identifies factors that affect students' learning and behavior
- Cultivates students' interest in the value of the content
- Instills students' pride in learning and in their work
- Provides students with opportunities for optimal learning

2c: Managing Classroom Procedures **1 2 3 4 NA**

- Follows daily routines for managing instructional groups
- Makes smooth transitions with little loss of instructional time
- Follows efficient routines for handling materials and supplies
- Uses effective strategies for managing non-instructional duties
- Supervises volunteers and paraprofessionals appropriately

- 2d: *Managing Student Behavior*** **1 2 3 4 NA**
- Observes and monitors student behavior
 - Assists students to apply conflict resolution techniques
 - Monitors the interactions of instructional groups to maximize productivity
 - Responds appropriately to student behavior
 - Works with students to encourage positive behavior choices
 - Encourages student self-discipline
 - Responds appropriately and successfully to student misbehavior

- 2e: *Organizing Physical Space*** **1 2 3 4 NA**
- Creates and maintains a physical environment that is safe
 - Develops functional arrangements conducive to learning
 - Arranges space so all students have access to learning

Domain 3: Instruction and Communication

Components:

- 3a: *Communicating Clearly and Accurately*** **1 2 3 4 NA**
- Uses appropriate and expressive vocabulary
 - Spells correctly
 - Writes legibly
 - Uses voice effectively through proper enunciation, volume, pitch, and speed
 - Uses proper/acceptable English grammar and syntax
 - Presents ideas clearly and concisely
 - Expresses ideas accurately and logically
 - Utilizes appropriate eye contact, posture, and other nonverbal gestures
 - Communicates equitably across various subgroups of students

- 3b: *Using Questioning and Discussion Techniques*** **1 2 3 4 NA**
- Uses questions at various cognitive levels to encourage higher levels of thinking
 - Uses open-ended questions
 - Uses questions that encourage exploration of content
 - Uses adequate wait time after asking questions and after students respond
 - Probes student responses, seeks clarification or elaboration
 - Engages a wide range of students in discussion

- 3c: *Engaging Students in Learning*** **1 2 3 4 NA**
- Connects lesson content to students' knowledge, interests, experiences, and culture
 - Communicates goals, objectives, directions, and procedures clearly
 - Selects examples and metaphors that illustrate ideas and skills
 - Paces lessons appropriately based on all students' needs and abilities
 - Incorporates a variety of activities and materials suitable to instructional goals and objectives
 - Encourages/Includes problem-based learning
 - Permits student choice and initiative

- 3d: *Providing Feedback to Students*** **1 2 3 4 NA**
- Provides accurate, specific, substantive and constructive feedback that advances understanding
 - Meaningfully evaluates student work and returns it in a timely manner
 - Gives feedback in a timely manner
 - Sensitive to verbal and nonverbal signals from students that indicate lack of understanding
 - Handles incorrect or misleading student responses in a manner that encourages learning

4f: Showing Professionalism

1 2 3 4 NA

- Attends promptly and regularly
- Completes schedules, assignments, and other paperwork on time
- Completes work in the manner prescribed
- Dresses commensurate with professional responsibilities
- Has neat grooming and practices good personal hygiene
- Follows school and class rules
- Follows relevant codes of ethics for the teaching profession
- Follows proper procedures for reporting students' welfare
- Shows respect for school and personal property
- Makes an effort to challenge prejudicial attitudes



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