An Investigation of the Instructional Pedagogy and Assessment Strategies Used by Teacher Educators in Two Universities Within a State System of Higher Education

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Abstract

Pedagogy and assessment are critical aspects of classroom teaching at all educational levels. Although training in these areas is often a primary focus of university programs preparing pre-service teachers, it is not necessarily part of the training for university faculty. Using survey methodology, this descriptive study investigated the pedagogical and assessment strategies used by teacher education faculty in two universities in one state system, as well as their opinions related to the effectiveness of these strategies. Results indicated that teacher education faculty most frequently use the pedagogical strategies rated as “somewhat effective” to “highly effective”, but routinely used assessment strategies that they rated lower on effectiveness.

Introduction

Institutions of higher education, along with public school districts, are struggling with the issues of high stakes testing and accountability. Teacher preparation programs are being held to high standards in order to prepare the best teachers to meet the challenges of today's diverse classrooms. This study investigated the experience teacher education faculty in two state school system universities have actually teaching in public or private elementary and/or secondary school classrooms, what pedagogical methods and assessment strategies are being used, and what pedagogical and assessment strategies are perceived as effective for use in higher education classrooms.

Literature Review

"Teaching children—to recognize letters, to read for the first time, to understand how a tree grows—is one of the most important jobs in America. The nation's future depends, in large part, on how well it is done. The National Council for Accreditation of Teacher Education (NCATE) is the profession's mechanism to help establish high quality teacher preparation. Through the process of professional accreditation of schools, colleges and departments of education, NCATE works to make a difference in the quality of teaching and teacher preparation today, tomorrow, and for the next century. NCATE's performance-based system of accreditation fosters competent classroom teachers and other educators who work to improve the education of all P-12 students. NCATE believes every student deserves a caring, competent, and highly qualified teacher" (www.ncate.org). Accreditation is a "hot topic" in higher education institutions with teacher preparation programs. This literature review will explore the pedagogical

approaches and classroom assessment practices of faculty members in higher education classrooms.

The Pedagogy of University Teaching

New university faculty members are often hired with no previous teaching experience or formal knowledge about pedagogy. Professors are rarely provided any instruction or professional development in the pedagogy of teaching. One attempt to "revitalize" undergraduate education is by shifting pedagogy to a learner-centered focus and "supporting an emphasis on the scholarship of teaching and learning" (Harris & Cullen, 2008, p. 58).

According to Bain (2004) the best college teachers recognize that intelligence is expandable (students can learn), know their subjects extremely well, are active scholars, create environments that are supportive yet challenging, have a strong trust in students, and care about student learning and deep knowledge. Professors with deep understanding of their subjects are more likely to find alternative ways of explaining concepts, create meaningful metaphors, and provide meaningful rationale for learning. Bain also suggested professors who are willing to relinquish some control are able to create a learning centered environment. This is supported by other researchers who found that motivation and self confidence are jeopardized by a lack of control and the more teachers use control measures the more students resist learning (Perry, 1997; Zull, 2002). Filene (2005) posited that effective teachers take students out of their comfort zones and challenge them with "unsettling ideas, set high standards, demand introspection and hard work – all the while, heeding how students are responding" (p. 3). And Finkel (2000) defined "good teaching" as "…the creation of those circumstances that lead to significant

learning in others" (p. 8). He went on to say that "Learning is the end; teaching is a means to that end. Teachers must never forget that end when devising ways to teach" (p. 8).

In 1995, Tom Drummond compiled a collection of practices that he believed constituted excellence in college teaching. The following are his core set of Best Practices:

1. Lecture Practices are defined as effective ways to present new information orally to fit differences in learning styles.
2. Discussion Group Triggers are ways to present common experiences to engage a group in discussion.
3. Thoughtful Questions are effective ways to formulate questions that foster engagement and confidence.
4. Reflective Responses to Learner Contributions establish mutually beneficial communication by reflective listening.
5. Rewarding Learner Participation is a way to support learner actions with well-timed, encouraging positives.
6. Active Learning Strategies foster active, constructive participation.
7. Cooperative Group Assignments are ways to assign formal cooperative tasks.
8. Goals to Grades Connections establish a logical agreement of goals and objectives, flowing to measures of performance, criteria and grading.
9. Modeling represents openness, continuous learning, and trust.

10. Double Loop Feedback facilitates the mutual awareness of how one learns to learn.
11. Climate Setting regulates the physical and mental climate.
12. Fostering Learner Self-Responsibility allows the learners to plan and evaluate much of their learning.

Many of Drummond's best practice techniques are supported by other research. In 1916 John Dewey wrote that education is not an experience of "telling and being told," but an active and constructive process. Even though this was realized over ninety years ago, lecture, which is clearly a method of telling, is still widely used today. In a university classroom, lecturing is a popular method of instruction that has advantages and disadvantages. McKeachie (2002) noted that lectures are good for presenting up-to-date information, summarizing material from a variety of sources, adapting material to the background and interests of a particular group of students at a certain time and place, helping students read more effectively by giving an orientation and conceptual framework, and focusing on key concepts or ideas. Advantages to lecturing include that the lecturer has face to face contact with students and this shared experience can form a relationship. Pragmatic reasons for lecturing are cost efficiency and pedagogical efficiency (Filene, 2005). Although lecture has its perks, Filene suggested that students "have grown up expecting – or even demanding – more than a 'talking head'" (p.53). He stated that the best lecturers add variety and drama into their teaching. As a disadvantage to lecture, Finkel (2003) noted, "… transmitting information from a teacher's head to a student's notebook is an inadequate objective for education. Otherwise, we could have the teacher write the information directly in the notebook and leave the middleman (the

student!) out of it" (p. 3). He also stated that lecture fails to produce significant learning for two reasons: 1) Lecturers presume students have had experiences that they have not had; and 2) In the typical lecture, reflection is done by the lecturer, not by the students. Negative aspects of lecture also include that lecturing works less effectively than discussing for promoting independent thinking or developing cognitive skills (Filene, 2005).

Finkel (2000) quoted Lion Gardiner as saying, "… research clearly favors discussion over lecture as an instructional method when the variables studied are retention of information after a course is over, transfer of knowledge to novel situations, development of skill in thinking or problem solving, or achievement in affective outcomes…" (p. 3). Discussion techniques are especially appropriate when the instructor wishes to help students learn to think in terms of subject matter, learn to evaluate the logic of and evidence for their own and others' positions, formulate application of principles, develop motivation for future learning, articulate what they have learned, and get prompt feedback on student understanding (McKeachie, 2002). Three types of discussion have been identified in the research: recitation occurs when the teacher asks close-ended questions and the students give the correct answer; conversation is where the instructor attempts to get a lively exploration of the day's topic; and seminars happen when teachers aim for a substantive and probing analysis of the day's topic (Filene, 2005). As with all pedagogical strategies, discussion can also present problems such as getting students to participate in the discussion (perhaps because they do not see the value in discussion, they fear criticism, and/or they want to find the answer the instructor wants), making progress toward course objectives, and handling the emotional reactions

that can be evoked in students (McKeachie, 2002). McKeachie recommended using a "fish bowl" approach to discussion where approximately six students are in the fishbowl and conduct the discussion. Other class members observe, take notes then write a brief summary. They are encouraged to raise questions that were not discussed or answer the question, "What would you have said that wasn't already said?" These discussion skills are also necessary for partner and small group cooperative work.

Cooperative peer learning is another strategy found to be effective in the college classroom. When using small groups the teacher presents a disciplinary problem requiring critical thinking, students work together to seek a consensus solution to the problem, and the teacher serves as a coach. Advantages of using small groups include students learn higher levels of thinking, small groups can be used with larger classes, students bond with each other, students develop leadership skills, and groups can be integrated into other teaching strategies including the use of small groups following a brief lecture (Bean, 2001). Cooperation is an important value in our culture and learning to work cooperatively with other students on a class project may have a positive impact on students' long-term value of cooperation (McKeachie, 2002).

The effectiveness of informal exploratory writing has also been noted in the research as a useful technique. Exploratory writing is important for university students because the writing process drives the thinking process. "Exploratory writing is typically unorganized and tentative, moving off in unanticipated directions as new ideas, complications, and questions strike the writer in the process of thinking and creating" (Bean, 2001, p.97). Bean gave numerous ideas for incorporating exploratory writing in courses. In-class writing assignments included writing at the beginning of a class to probe

a subject, writing during class to refocus a discussion or cool off a heated discussion, writing during class to ask questions or express confusion, and writing at the end of class to sum up a lecture or discussion. He also noted the value of learning journals, learning logs, double-entry notebooks (summarizing course material and recording their own reflections), and creativity exercises such as writing dialogues, bio-poems, metaphor games, and extended analogies.

Other alternative activities that are used to promote critical thinking and active learning are debates, role-plays, and cases. Debates can be held either between two faculty members or with student teams. When using student teams, it is important to choose a debatable issue that matches the learning goals and requires research (Bean, 2001). Also, students need a clear structure (McKeachie, 2002; Bean, 2001), need to know the length of the debate, how to prepare a rebuttal, and the goal of the debate as a learning device (McKeachie, 2002). Following the debate the entire class can try to find a solution or resolution that takes both sides into account (McKeachie, 2002) or each student can write a summary defending his or her side of the debate (Bean, 2001). Role playing is like a drama where each participant is given a character to portray, but no lines are learned. The individuals improvise their responses and are usually involved in a situation that presents a problem or conflict (McKeachie, 2002). Filene (2005) cautioned that in order for role playing to work effectively, students need to work with a lot of evidence beforehand, either through material assembled by the instructor or through their own research.

Case methods also teach students to apply abstract theory and analysis to real-life situations (Filene, 2005). Cases are typically descriptions of problem situations that occur

in the field of study. They often have several alternative approaches or actions and they require students to apply course content and research (McKeachie, 2002). All of these strategies promote critical thinking and problem solving and can be used to enhance, or even replace, the lecture.

Drummond (1995) stated that becoming an excellent college teacher is a continuing life-long professional challenge. He mentioned that we often erroneously assume new teachers know how to teach because they used to be students. In addition to the pedagogy a professor brings to the classroom, the knowledge of strategies used to assess students' learning also impacts what and how the students learn. In fact, the link between assessment and learning has been studied since the early 1970's, and clearly indicates that assessment impacts student learning (Boud & Falchikov, 2007). Given the link between instruction and assessment, it can be assumed that these same teachers lack knowledge of assessment strategies as well as instructional pedagogy.

Assessment Techniques Used in Higher Education

Much has been written regarding the roles, methods, and importance of assessment in higher education. As assessments serve to inform the students, instructors, the university and its accrediting bodies of the effectiveness of instruction, assessment is a critical aspect of higher education (Wehlburg, 2008). Assessment can also be considered a critical component of learning for the students, as it helps them focus their attention and allocate their time (Gibbs & Simpson, 2004). In fact, Boud and Falchikov (2007) underscored the importance of assessment on student learning stating,

> Assessment, rather than teaching, has a major influence on students' learning. It directs attention to what is important. It acts as an incentive for study. And it has a

> powerful effect on what students do and how they do it. Assessment also communicates to them what they can and cannot succeed in doing. For some, it builds their confidence for their future work; for others, it shows how inadequate they are as learners and undermines their confidence about what they can do in the future (p. 3).

Assessments serve a variety of functions for the professor as well. They can be used to focus student learning, as a means to provide feedback to students regarding their learning, as vehicles to score or grade student performance, and as a means of motivating the students to learn course material (Gibbs, 1999). Assessments can also be used by the university instructor to inform instruction during instruction (Smith, 2007). Formative assessments, or measures of student knowledge that are given prior to or during instruction, provide information on the students' learning needs and their progress toward subject mastery. Consequently, the function of formative assessments is to provide both the instructor and learner with information during the course of the learning (or teaching) to improve the overall learning experience (Palomba & Banta, 1999). Not linked to any specific assessment technique, formative assessments can use any tool that provides information that allows the professor to provide specific feedback to the student on how to improve their mastery of the material (Irons, 2008). As formative assessments serve to directly enhance both the learning experience and outcomes for students, many authors contend that this model of assessment should be considered a critical component of effective teaching and learning (Irons, 2008; Kvale, 2007).

In contrast, summative evaluations, or measures of student learning post instruction, can be used to identify goals and standards that require additional instruction

(and consequently relate back to formative assessments), or to assigning grades or certifications (Knight, 2007). A number of problems with the use of summative assessments have been noted, and include their focus on written tests as opposed to other assessment tools, questions regarding bias and validity, and perhaps most importantly, the limited usefulness as a tool for learning and impacting future performance (Iron, 2008). For example, if a pencil-and paper-test is designed to assess factual information and given as a final examination (a typical practice in many courses), the student may not have the opportunity to examine their errors or the instructor's comments, and would consequently not receive any specific feedback that would be useful for remediation of errors, clarifying their thinking, or extending their knowledge of the subject matter. In this example, a summative assessment may be useful for summarizing learning or assigning a grade but not for building the student's knowledge of course content.

In addition to the variety of roles of assessment, there are a variety of tools used to measure student knowledge. Petress (2007) identifies "paper and pencil tests using true/false, multiple-choice, matching, fill in the blank, short answer, and essay question items; oral tests including Socratic class session quizzing and more formal in-class or in-faculty-office oral exams, take-home essay tests; student portfolios; student performances or presentations that are evaluated; graded group projects, and laboratory or field experiments" (p. 1098) as some typically used forms of assessment. He goes on to state, "(m)any instructors employ a limited repertoire of testing methods, relying instead on one or a few options…primarily due to the reality that the majority of college faculty have minimal formal education or training in teaching and testing strategies" (p. 1098).

Selection and design of the assessment tool is almost always the sole responsibility of the individual professor, and is impacted by a number of factors. In addition to a lack of formal training on assessment options, time constraints also appear to impact assessment selection. Gayton (2007) noted that the university professor must balance a number of academic demands, including designing coursework, research and writing, student advisement, and administrative tasks relating to their jobs. Consequently, although assessment is critical to education in many ways, "assessment design and implementation is often approached as an afterthought" (Gayton, 2007; p. xx).

Multiple-choice tests, including true/false and short answer items, are the primary form of assessment in higher education (Kvale, 2007). This may be, in part, due to their relative ease in administration and scoring, as well their measurement of explicit learning (Palomba & Banta, 1999). While easy to use and relatively "familiar" to both the professor and student, multiple-choice assessments have a number of limitations for both the student and instructor: they tend to measure facts rather than the complex interrelation of course material, they do not emphasize creative or higher-order thinking, and they have little relation to how knowledge will be used in the student's future professional life (Kvale, 2007). Additionally, if pencil-and-paper exams are used primarily to assign a grade, they do not do not provide feedback required for additional learning by the student.

There are many alternatives to formal exams, each with unique strengths, weaknesses, and application to student learning. Falchikov (2005) identified case studies, exhibitions, journals/reflective logs/diaries, learning contracts, observations, oral presentations, portfolios, simulations, work-based learning, and self-and peer assessments

as useful alternatives to traditional examinations. The majority of these, depending on when they are evaluated and the feedback associated with them, could function as either formative or summative assessments. This author goes on to posit that enhanced student learning requires active student participation in the assessment process. Assessments stressing skill demonstration in real environments (performance assessments) and those that measure knowledge of ways to solve actual problems (authentic assessments) are two of the many ways to address assessment and enhance learning.

To investigate the types of assessments used by college instructors, as well as the trends in use across faculty status, training, and experience, Lei (2008) surveyed 183 full-time and adjunct instructors in two community colleges. Results indicated that adjunct faculty were more likely to use objective exams (i.e., written tests) than were full-time faculty, who more often utilized active learning measures (e.g., laboratory activities, learning journals, cooperative learning) to assess student learning. Of note from this research is the finding that three of the frequently recognized assessment practices from the literature on effective formative assessment, portfolio and peer and self evaluations, were rarely used by either group of instructors. The selection of an assessment tool may be a function of enrollments in a given class, as objective exams are relatively time-efficient to grade, or of an instructor's training and experiences. Doctoral level instructors completing the survey indicated that they learned their assessment techniques from personal experience (24%) and colleagues (14%) more than from a course (12%), seminars or workshops (9%) or the campus teaching and learning center (1%). These results support Petress' (2007) contention that professors receive little formal instruction on the design, execution and use of assessment tools.

In summary, effective teaching and assessment in higher education are complex issues that appear to be impacted by a number of individual and organizational issues. There are a variety of instructional and assessment techniques available to the university professor, many of which vary in the degree with which students actively participate in their implementation. What is considered "best practice" in the areas of teaching and assessment and what practicing professors actually do in their classrooms is an area that warrants additional research.

Research Questions

1. What percentage of higher education faculty responding to the survey and currently teaching pre-service teachers in two state school system universities have taught in a public or private elementary or secondary school classroom? Of those who have taught, how many years did they teach?
2. What pedagogical methods do higher education faculty who are preparing pre-service teachers in two universities within one state school system use in their classrooms?
3. What do higher education faculty who are preparing pre-service teachers in two universities in one state school system, perceive to be "best practice" in the pedagogy of teaching?
4. What assessment strategies do higher education faculty who are preparing pre-service teachers in two universities within one state school system use in their classrooms?

5. What assessment strategies do higher education faculty who are preparing pre-service teachers in two universities within one state school system, perceive to be the most effective?

Methodology

With fourteen universities and more than 112,500 students, the Pennsylvania State System of Higher Education (PASSHE) is the largest higher education provider in Pennsylvania. PASSHE's mission, as stated on their web site, is to increase the intellectual wealth of the Commonwealth, to prepare students at all levels for personal and professional success in their lives, and to contribute to the economic, social, and cultural development of Pennsylvania's communities, the Commonwealth, and the nation (www.passhe.edu). After receiving approval from the Institutional Review Boards of Bloomsburg University of Pennsylvania (BU) and Indiana University of Pennsylvania (IUP), a validity pilot of the researcher developed survey was conducted. Eight individuals completed electronic or paper copies of the survey questions. Each individual had experience teaching at the college level, and included two full professors from outside the PASSHE system, three adjunct instructors (master's and doctoral level) currently not teaching within the PASSHE system, two retired PASSHE professors and a retired professor from outside the system. Only minor modifications of the survey instrument were noted and were reflected in the final survey instrument.

Faculty members who teach at two of the PASSHE universities were surveyed using an electronic survey tool. There were 84 responses from IUP and 39 responses from BU for a total of 123 participants. For the purposes of this study, a filter was used to

select responses from participants who were teacher educators. A total of 55 of the 123 participants were teacher educators – 39 from IUP and 16 from BU.

The survey included 102 questions and addressed demographic information such as what discipline the faculty members are preparing students to teach, how many years the faculty members have been teaching at the university level, and how many years if any the faculty members had teaching public or private elementary or secondary education. The rest of the survey was devoted to pedagogical instructional strategies (such as lecture, discussion, debates, cooperative learning projects, and others) and assessment strategies (such as paper-and-pencil quizzes and tests and various authentic assessments). The survey was completed using a three-point Likert scale of the perceived effectiveness (Very Effective, Somewhat Effective, and Not Effective) and frequency of use (Frequently Use, Sometimes Use, Never Use) of the various methods.

Average effectiveness and frequency of use scores were tabulated using mean scores 1.00-3.00 with 1.00 indicating the strategies were not effective or never used, 2.00 demonstrating somewhat effective or sometimes used, and 3.00 illustrating very effective or frequently used.

Results

Demographics

The majority of the participants were professors in elementary education (12) and special education (11). This could be due to the fact that the researchers are from these two departments. Seven mathematics instructors, five English professors, and four health and physical education professors also participated in the study. Other departments/disciplines who were represented with one or two respondents included art,

biology, chemistry, business, geoscience, history, music, nursing, technology and support training, reading, and speech language pathology.

Thirty-nine (72%) of the participants were tenured, ten (17%) were tenure-track, three (6%) were non-tenure track, two (4%) were adjuncts and one (2%) was a temporary employee. Eighteen (32%) full professors, sixteen (28%) associate professors, sixteen (30%) assistant professors, and five (9%) instructors completed the survey. Gender distribution was almost equal with 29 males and 26 females. The following chart shows years of teaching experience in higher education:

Number of Years Teaching Higher Education	Number of Respondents n=55
1-5	10
6-10	14
11-15	12
16-20	5
21-25	4
26-30	5
More than 30	5

Research Question One: What percentage of higher education faculty responding to the survey and currently teaching pre-service teachers in two universities within one state school system have taught in a public or private elementary or secondary school classroom? Of those who have taught, how many years did they teach?

Prior to teaching in a higher education institution sixty-eight percent (37) of the 55 faculty teaching in teacher preparation programs had taught in a public or private school setting, and of those over fifty-percent had taught less than twenty years. Slightly over half of the respondents (29) had taught in public or private schools five years or fewer.

Instructional Strategies

The following tables show the instructional and assessment strategies, the effectiveness means, and the frequency of use means. Following each table is a ranking of the strategies to determine which techniques professors in two state system universities in teacher preparation programs deem most effective and which strategies they are most often utilizing in their university classrooms.

Instructional Strategies	Effectiveness Mean	Frequency of Use Mean
Lecture	2.11	2.32
Large Group Discussion	2.37	2.40
Pair or Small Group Discussion	2.77	2.72
Role Play	2.40	1.86
Videos/DVDs/Online Clips	2.41	2.20
In-Class Application or Problem-Solving Activities	2.90	2.74
Guest Speakers	2.19	1.67
Student Presentations	2.49	2.39
Student Debates	2.36	1.83
Labs/Experiments	2.58	2.40
Demonstrations	2.67	2.40
Video Conferencing	1.80	1.11
Cooperative Learning	2.65	2.42
Jigsaw	2.39	1.95
Field Trips	2.53	1.72
Internet Web Sites	2.30	2.31
Brainstorming	2.75	2.45
Graphic Organizers	2.43	2.22
In-Class Writing Activities	2.39	2.33
Storytelling	2.37	1.96

n = 55
Means: 1.00 not effective or never used; 2.00 somewhat effective or sometimes used; 3.00 very effective or frequently used

<u>Effectiveness Ranking (Mean)</u>
1. In-Class Application/Problem Solving Activities (2.90)
2. Pair/Small Group Discussion (2.77)
3. Brainstorming (2.75)
4. Demonstrations (2.67)
5. Cooperative Learning (2.65)

<u>Frequency of Use Ranking (Mean)</u>
1. In-Class Application/Problem Solving Activities (2.90)
2. Pair/Small Group Discussion (2.72)
3. Brainstorming (2.75)
4. Cooperative Learning (2.42)
5. Large Group Discussion (2.40)

	5. Labs/Experiments (2.40)
	5. Demonstrations (2.40)
6. Labs/Experiments (2.58)	6. Student Presentations (2.39)
7. Field Trips (2.53)	7. In-Class Writing Activities (2.33)
8. Student Presentations (2.49)	8. Lecture (2.32)
9. Graphic Organizers (2.43)	9. Internet Web Sites (2.31)
10. Videos/DVDs/Online Clips (2.41)	10. Graphic Organizers (2.22)
11. Role Play (2.40)	11. Videos/DVDs/Online Clips (2.20)
12. Jigsaw (2.39)	12. Storytelling (1.96)
12. In-Class Writing Activities (2.39)	
13. Large Group Discussion (2.37)	13. Jigsaw (1.95)
13. Storytelling (2.37)	
14. Student Debates (2.36)	14. Role Play (1.86)
15. Internet Web Sites (2.30)	15. Student Debates (1.83)
16. Guest Speakers (2.19)	16. Field Trips (1.72)
17. Lecture (2.11)	17. Guest Speakers (1.67)
18. Video Conferencing (1.80)	18. Video Conferencing (1.11)

Instructors listed several instructional strategies used in their classrooms that were not mentioned on the survey. These strategies included case studies, content enhancement strategies, envelopes questioning strategies, interviews, microteaching, readers' theater, equitable pupil response methods, and WebCt.

Research Question Two: What pedagogical methods do higher education faculty who are preparing pre-service teachers in two universities within one state school system use in their classrooms?

The above tables indicate that the most frequently used instructional strategies included in-class application and problem solving activities, pair or small group discussion, brainstorming, cooperative learning, large group discussion, labs/experiments, demonstrations, and student presentations. The strategies used least are role play, student debates, field trips, guest speakers, and videoconferencing.

Research Question Three: What do higher education faculty who are preparing pre-service teachers in two universities within one state school system, perceive to be "best practice" in the pedagogy of teaching?

The above tables illustrate that faculty perceive the most effective instructional strategies as being in-class application and problem solving, pair or small group discussion, brainstorming, demonstrations, and cooperative learning. The strategies they perceive as being least effective are student debates, internet web sites, guest speakers, lecture, and video conferencing.

Assessment Strategies

Assessment	Effectiveness Mean	Frequency of Use Mean
Objective paper and pencil tests	2.06	2.25
Essay Tests	2.28	2.06
Quizzes	2.16	2.20
Oral Presentations	2.52	2.41
Written Reports	2.48	2.38
Portfolios	2.26	1.8
Learning Journals	2.27	1.81
Cooperative Learning Projects	2.5	2.3
Debates	2.39	1.69
Written Reflections	2.57	2.27
In-Class Group Projects	2.43	2.31
Out-of-Class Group Projects	2.2	2.02
Lab/Experiment Reports	2.39	2.0
Field-based Projects	2.64	2.17
Observation Reports	2.58	2.19
Homework Assignments	2.27	2.28
Peer Evaluations	2.11	1.96
Self-evaluations	2.35	2.10
Attendance	2.65	2.69
Class participation	2.6	2.62

n = 55
Means: 1.00 not effective or never used; 2.00 somewhat effective or sometimes used; 3.00 very effective or frequently used

Effectiveness Ranking (Average)	Frequency of Use Ranking (Average)
1. Attendance (2.65)	1. Attendance (2.69)
2. Field-based Projects (2.64)	2. Class Participation (2.62)
3. Class Participation (2.6)	3. Oral Presentations (2.41)
4. Observation Reports (2.58)	4. Written Reports (2.38)
5. Written Reflections (2.57)	5. In-Class Group Projects (2.31)
6. Oral Presentations (2.52)	6. Cooperative Learning Projects (2.3)
7. Cooperative Learning Projects (2.5)	7. Homework Assignments (2.28)
8. Written Reports (2.48)	8. Written Reflections (2.27)
9. In-Class Group Projects (2.43)	9. Objective Pencil and Paper Tests (2.25)
11. Lab/Experiment Reports(2.39) TIE	10. Quizzes (2.2)
11. Debates (2.39)	11. Observation Reports (2.19)
12. Self-Evaluations (2.35)	12. Field-Based Projects (2.17)
13. Essay Tests (2.28)	13. Self-Evaluations (2.1)
15. Learning Journals (2.27) TIE	14. Essay Tests (2.06)
15. Homework Assignments (2.27)	15. Out-of-Class Group Projects (2.02)
16. Portfolios (2.26)	16. Lab/Experiment Reports (2.0)
17. Out-of-Class Group Projects (2.2)	17. Peer Evaluations (1.96)
18. Quizzes (2.16)	18. Learning Journals (1.81)
19. Peer Evaluations (2.11)	19. Portfolios (1.8)
20. Objective Paper and Pencil Tests (2.06)	20. Debates (1.69)

Research Question Four: What assessment strategies do higher education faculty who are preparing pre-service teachers in two universities within one state school system use in their classrooms?

Results of the ratings of effectiveness and frequency of use for assessment techniques are presented in the above tables. Frequency of use ratings for assessment techniques ranged from 2.69 to a low of 1.69. Of these scores, only two were rated above 2.5 (attendance, class participation). While the majority of the scores were between 2 and 2.4, three received ratings below 2: learning journals (1.81), portfolios (1.8), and debates (1.69).

The five most frequently used assessment strategies included attendance, class participation, oral presentations, written reports and in-class group projects. The five least

frequently used assessment strategies included lab/experiment reports, peer evaluations, learning journals, portfolios, and debates.

Research Question Five: What assessment strategies do higher education faculty who are preparing pre-service teachers in two universities within one state school system, perceive to be the most effective?

Effectiveness ratings ranged from a high of 2.65 for attendance to a low of 2.06 for objective paper and pencil tests. Seven of the scores received an average rating at or above 2.5 (attendance, field-based projects, class participation, observation reports, written reflections, oral presentations, cooperative learning projects), indicating that these assessment tools were perceived as being somewhat to very effective. No assessment technique received an average score below 2.0.

Additional assessment techniques noted by the participants as being used (but not specifically noted in the survey tool) include: graded lesson plans, demonstrations, interviews, informal in-class questioning, performance testing, research summaries, video performance reviews, feedback and "re-do" of assignment.

Discussion

This section of the paper will be devoted to a comparison of what university professors at two state universities who are teaching pre-service teachers, perceive to be effective instructional and assessment strategies and what strategies they are actually using in their classrooms. The discussion will also compare what is actually happening in some university classrooms and what is suggested by researchers found in the literature review as being effective. First, limitations of this study and recommendations for future research are given.

Limitations

1. The pilot was not conducted with the on-line survey instrument; there may have been problems with the format, directions or functionality of the paper and pencil survey that was not identified prior to dissemination.

2. A relatively small numbers of participants from two state-owned universities were the only participants. Results cannot be generalized to other faculty at other institutions.

3. Survey instrument did not capture how assessment tools were used (i.e., formative, summative, degree of feedback), which may impact the usefulness of any tool.

4. Results presented in descriptive, ordinal formats only (no formal statistical analysis at this time).

Future Directions

1. Researchers could survey all teaching members of PASSHE system to increase numbers of participants and determine if there are differences in pedagogy and assessment use across campus cultures.

2. Formal statistical analyses could be used in analyzing and interpreting results.

3. Results of teaching faculty in teacher preparation programs and those who are not in teacher preparation programs could be compared.

Instructional Strategies

It was interesting to note that for instructional strategies the three categories ranked most effective were also the three most frequently used. In-class application and problem solving activities, pair/small group discussion, and brainstorming were all strategies used by the faculty, perceived as effective, and found to be effective in the research (Bean, 2001; Filene, 2005; Finkel, 2003; McKeachie, 2002).

In all but three categories (lecture, large group discussion, and internet web sites), the effectiveness mean for instructional strategies was higher than the use mean. This indicated that what professors are using in their classrooms is not necessarily what they deemed to be most effective. The first one, lecture, is a prime example. In the research lecture is said to have its advantages and disadvantages however it appeared that there were more cons than pros (Filene, 2005; Finkel, 2003; McKeachie, 2002). Some of the advantages from the research included that lecture provided up-to-date information, allowed the instructor to summarize and adapt material, presented key concepts and ideas (McKeachie, 2002), and is cost effective and efficient (Filene, 2005). Finkel (2003) listed a disadvantage being that lecture fails to produce significant learning and McKeachie (2002) discovered that lectures fail to engage students. Lecture ranked number eight on the frequently used category but ranked seventeenth (next to the last) in its effectiveness.

Five of the categories (role play, guest speakers, student debates, video conferencing, and field trips) were ranked as effective but were rarely being used in the university classrooms showing a mean difference of >.52. These strategies, especially role play and student debates were suggested in the research as effective techniques (McKeachie, 2002; Bean, 2001).

The remaining strategies (videos/DVDs/online clips, student presentations, labs/experiments, demonstrations, cooperative learning, jigsaw, graphic organizers, in-class writing activities, and storytelling) fell in the middle of the effectiveness and use categories. These techniques averaged 2.49 in effectiveness and 2.25 in the frequency of use.

Based on this study and the literature review, it appears that in teacher preparation programs, lecture is not the most effective or most frequently used method of lesson delivery. Strategies that make students think and apply, small group discussions, and brainstorming are perceived as most effective and are being used most frequently in the college classrooms to model appropriate strategies for tomorrow's teachers.

Assessment

Attendance received the highest average score on both the measure of effectiveness and use, with an effectiveness mean of 2.65 and a use mean of 2.69. This is especially remarkable as attendance is rarely identified in the professional literature as an effective and recommended assessment tool. Attendance, however, has been found to be one variable relating to student success (Schiming, nd). Consequently, while getting a student to class is a necessary prerequisite of classroom learning, attendance neither guarantees nor measures learning, and may be why current researchers in higher education assessment recommend assessment practices that foster active involvement by the student (Mezeske, 2007)

Attendance was the only assessment technique that received the same ranking on measures of effectiveness and use. In fact, there were a number of assessments that were ranked much higher on effectiveness than they were on use, indicating that although the professors feel the tool is effective, they do not consistently use it. This category includes field based projects, observation reports, and written reports. Although the survey participants were not asked to explain why they did or did not use any particular assessment strategy, these three assessments may require a significant amount of time to

arrange and grade, and consequently may be an alternative that the instructor does not have time to implement.

There were also a number of assessments that were relatively low standing on the measure of effectiveness but were consistently used by the respondents. Objective pencil and paper tests received the lowest endorsement of effectiveness of all 20 assessment techniques with an average of 2.06 but was the ninth most frequently utilized tool (2.25). Similarly, quizzes were rated 18th most effective but the 10th most used. Brown (2004) argued strongly that any assessment needs to be designed to be time efficient for staff; while tests and quizzes are often easy to grade (especially for sections with large numbers), the low scores on the effectiveness scale by these participants echo the concerns related to exams enhancing student learning posed by Irons (2008).

Overall, the highest rated assessments for effectiveness include attendance, field-based projects and class participation, and the lowest rated include quizzes, peer evaluations and objective paper and pencil tests. The highest rated assessments for frequency of use include attendance, class participation and oral presentations, and the least likely to be used include learning journals, portfolios and debates. Given the low overlap between the perception of effective practices and use, it does not appear that the faculty members participating in the survey are consistently utilizing those assessment strategies they identify as effective.

Conclusions

Public school teachers, in their undergraduate and graduate programs, are typically taught how to teach and how to assess. There are no formal requirements for university faculty, even those preparing pre-service teachers, to have training in

instruction or evaluation of students, although some teacher education programs *recommend* their faculty have prior teaching experience. Slightly under a third of the university faculty surveyed for this study had no previous public or private school experience; therefore, it is quite probable they are very knowledgeable, perhaps even considered to be experts, in their fields but have no experience or training in the pedagogy of teaching. Because of the high stakes tests involved in teacher education programs, and because today's children deserve teachers who can provide effective instruction and assessment, it is necessary that institutions of higher learning who are preparing tomorrow's teachers assure their own faculty can model best practices in the field. Sadly, as the researchers found in this study, even faculty members who are aware of effective instructional and assessment techniques are not always using them in their university classrooms. Where is the accountability? Filene (2005) was exactly right when he said our college students deserve more than talking heads. The students deserve to be taught in ways that actively engage them in the learning process, are student-centered, and evaluate their learning using a variety of measures.

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