

Classroom Assessment Literacy: Evaluating Pre-Service Teachers

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Abstract: *Classroom assessment literacy is a vital part of pre-service teachers' preparation because it allows them to monitor student progress and document their effect on student learning. This longitudinal study measures participants' knowledge of standards-based classroom assessment strategies during their teacher preparation. Early results reveal that pre-service teachers lack assessment literacy, despite completing courses in classroom assessment. Additionally, secondary education majors and those who have been admitted to a professional program show a greater knowledge of assessment practices. Suggestions for improving pre-service teachers preparation are discussed.*

Keywords: *Classroom Assessment, Pre-Service Teacher Education, Program Evaluation*

The current education system demands that teachers have a command of different forms of classroom assessment. Specifically, teachers need to be able to create and implement valid and reliable assessments in order to measure student learning and gauge the effectiveness of their teaching. Also, teachers need to be able to discuss the results of assessments with parents and students, as well as use the results of their assessments and standardized assessments to adjust instruction. Proper assessment in the classroom plays a vital role in ensuring students are meeting instructional objectives. Despite an emphasis being placed on classroom assessment for the past 3 decades, evidence suggests deficiencies in classroom assessment knowledge in classroom teachers (Plake, Impara, & Fager, 1993; Marso & Pigge, 1993; Hayden, Oescher, & Banbury, 1995; Aschbacher, 1999) and pre-service teachers (Alkharusi, Aldhafri, Alnabhani, & Alkalbani, 2012; Daniel & King, 1998; McMillan, Myran & Workman, 2010).

Green and Johnson (2010) note that if we are to provide equal access to education, teachers need to maximize learning, which dictates that they use sound assessment practices in the classroom to measure student growth. Recognizing the impact assessment literacy has on teaching and learning, the American Federation of Teachers, the National Council on Measurement in Education, and the National Education Association (1990), jointly developed "Standards for Teacher Competence in Educational Assessment of Students." These standards cover a variety of topics in assessment including, selecting and developing appropriate assessments that are valid and reliable; administering, scoring and using the results of teacher-made tests and standardized assessments; creating proper grading procedures; communicating assessment results and understanding the ethics of assessment. However, DeLuca and Bellara (2013) examined a possible misalignment of pre-service programs to standards as a contributing factor to low assessment competency among teachers. The present study will address the issue of teacher preparation from a program evaluation perspective.

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DEFINING ASSESSMENT LITERACY

In 1991, Richard Stiggins introduced the idea of assessment literacy. In his seminal article, "Assessment Literacy," he maintained that education and the research associated with it spent too much time on just the process of learning or producing learning. To understand the product of teaching, educators must be able to judge and analyze data to provide effective instruction. Stiggins (1995) later explains, "Assessment literates know the difference between sound and unsound assessment. They are not intimidated by the sometimes mysterious and always daunting technical world of assessment" (p. 240). Assessment-literate teachers understand how to measure the process of learning. Webb (2002) provides a definition that includes the process of learning. He defines assessment literacy, "as the knowledge of means for assessing what students know and can do, how to interpret the results from these assessments, and how to apply these results to improve student learning and program effectiveness" (p.1). He explains that those associated with education need to be assessment literate because of the emphasis on measuring student outcomes through standardized testing and the variety of assessment forms available.

PRE-SERVICE TEACHERS' KNOWLEDGE OF ASSESSMENT LITERACY

If teachers want to take ownership of their classrooms and the assessments used to measure student learning and progress, they need be assessment literate. Stiggins (2014) argues, animatedly, that we can not continue to turn a blind eye to "practitioners' lack of competence in classroom assessment." (p.72) Two studies recently conducted in the country of Oman highlight some of the issues and discrepancies in teacher assessment knowledge. Alkharusi, Kazem, and Al Musawai (2011) found pre-service teachers outperformed in-service teachers in knowledge of assessment on a variety of measures related to assessment, attitudes, perceived skills and knowledge. Participants who had completed a measurement course were more literate in assessment. Though the mean scores for various groups were often less than 50 percent, gains in knowledge can be associated with completing measurement courses and a teaching practicum. Alkharusi, Aldhafri, Alnabhani, and Alkalbani (2012) also found teachers were lacking in assessment literacy knowledge despite having positive attitudes about assessment and perceiving high levels of competence in assessment.

Teacher preparation programs need to optimize opportunities to promote the development of assessment-literate teachers. Alkharusi's, et. al. (2011) research suggests the value in connecting course content with field-based experience to maximize pre-service teachers' understanding of assessment of student learning. Pre-service teachers in our university have one to two courses in which the primary focus is on our teaching candidates' assessment literacy.

RESEARCH QUESTIONS

The goals of the current research project are to measure and monitor pre-service teachers' knowledge and application of assessment literacy and adjust programs to meet deficiencies. We designed the study to pinpoint areas of strengths and weaknesses to improve our professional programs in more effectively preparing teaching candidates in the knowledge and skills of classroom assessment. The research questions addressed in the study were:

1. What is the level of assessment literacy, as measured by the *Teacher Assessment Literacy Questionnaire by Plake & Impara* (1992), of our pre-service teachers?
2. How does the assessment literacy of our pre-service teachers compare across professional programs - early childhood, elementary, and secondary education?

METHODS

PARTICIPANTS

Participants in this study were pre-service teachers enrolled in a small university in the Southeast part of the United States. Of those who completed the pre-test and the post-test, the majority of students were enrolled in the elementary program (n=12) and members of the undergraduate educational psychology class (n=13). Just over half the students had been admitted to the School of Education teacher program (n=14).

INSTRUMENTATION

The Teacher Assessment Literacy Questionnaire (TALQ) by Plake & Impara (1992) was used to assess pre-service teachers' knowledge of assessment. This survey aligns with the seven "Standards for Teacher Competence in Education Assessment of Students" and there are five questions per standard. The 35 items are multiple-choice question with four possible answers and one correct answer. In recent studies, the KR20 reliability coefficient for the scores was .62 (Alkharusi, Aldhafri, Alnabhani, & Alkalbani, 2012) and .78 (Alkharusi, Kazem, & Al-Musawai, 2011). In the current study, the KR20 reliability coefficient was .77.

PROCEDURES

This is a longitudinal research project measuring pre-service teachers' knowledge of classroom assessment using the TALQ four times during their teacher training. Students enrolled in classes identified as teaching classroom assessment, will be asked to complete an online survey. This survey asks students to provide their student ID number, as a way to track them during the study. It also contains a few demographic questions, like "What is your major?" along with the 35 items of the TALQ.

The first administration of the test occurred during the first two weeks of their educational psychology class and then a second administration of the test was during the last two weeks of this class. The third and fourth administrations of the test will occur in their program level Classroom Assessment methods course. As with the educational psychology course, the administrations will occur at the beginning and end of the course. To gain a baseline, students enrolled in the methods courses this semester were given the questionnaire at the beginning and end of the course.

RESULTS

Forty-nine students completed the first administration of the Teacher Assessment Literacy Questionnaire (TALQ), however, only 26 of those students completed both administrations. Table 1 presents means and standard deviations of TALQ. A Repeated Measures ANOVA was conducted to see if students' scores differed from the first administration to the second. No significant differences were found. Independent samples t-tests were used to determine if there were overall differences between the first and second administration per standard. Again, there were not significant differences. Finally, scores were compared based on the different programs of study (early, elementary, and secondary) and whether students were admitted to the program or not. Students in the secondary programs scored better on both administrations of the test in comparison to those in the early and elementary programs (See Figure 1). Additionally, those who were admitted to the

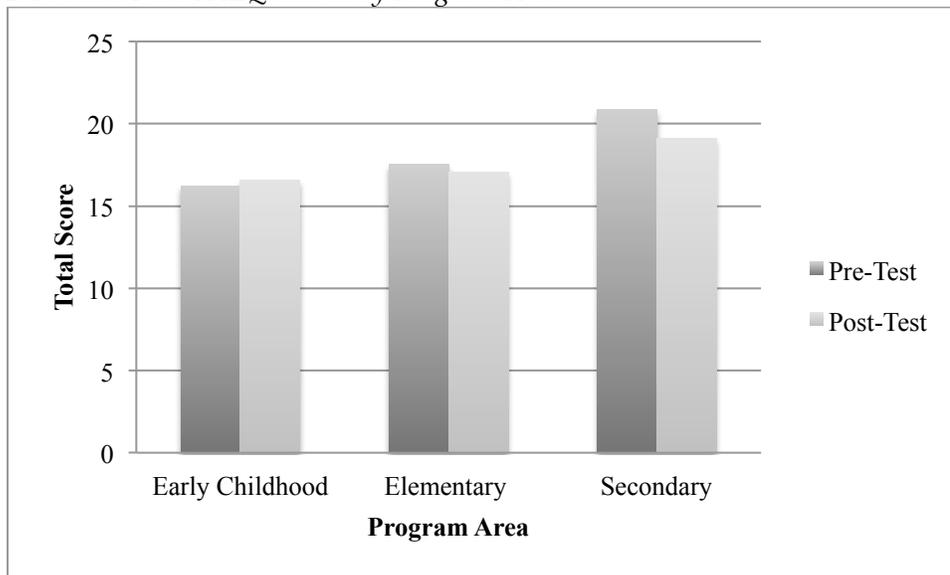
program outperformed those who were not in the program on both administrations (See Figure 2).

Table 1. *Pre and Post TALQ Means and Standard Deviations*

	<i>M</i>	<i>SD</i>
Pre-Test		
Total	17.92	4.82
Standard One	3.08	1.09
Standard Two	2.54	1.03
Standard Three	2.78	1.27
Standard Four	2.35	1.16
Standard Five	2.78	.908
Standard Six	1.50	1.10
Standard Seven	2.92	1.16
Post-Test		
Total	18.15	5.98
Standard One	3.35	1.05
Standard Two	2.54	.948
Standard Three	2.92	1.19
Standard Four	2.69	1.29
Standard Five	2.54	1.07
Standard Six	1.46	1.21
Standard Seven	2.65	1.26

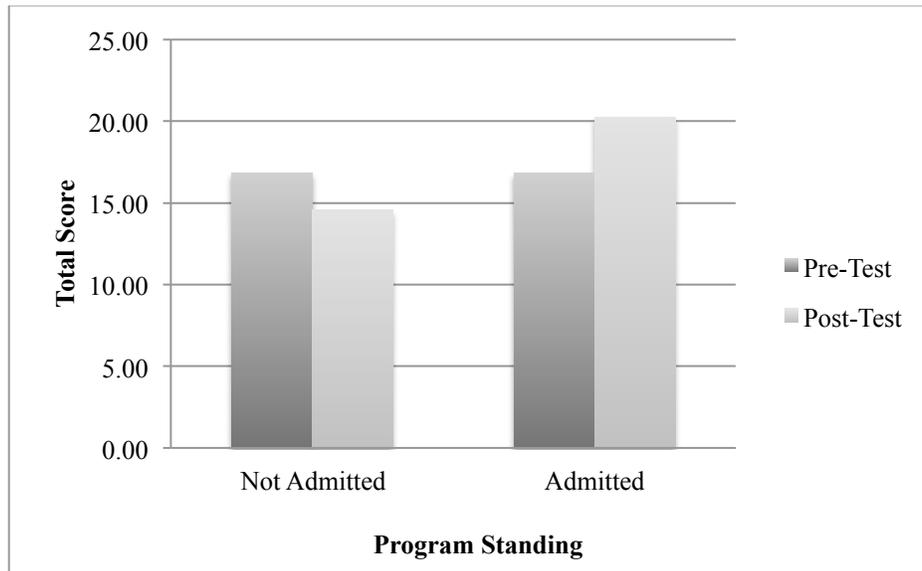
Notes: N=26

Figure 1. *Pre and Post TALQ Scores by Program Area*



Our initial results from this study indicate that our students are not improving in assessment literacy. Specifically, their knowledge of classroom assessment practices seems to remain the same over the course of the semester. However, there are some differences to note. Secondary students and students who have been admitted to the program have a better understanding of assessment literacy.

Figure 2. Pre and Post TALQ scores by Program Standing



DISCUSSION

As noted previously, the goal of this research is to monitor and improve pre-service teachers' knowledge of classroom assessment practices. This study has helped to identify areas of weakness, including communicating assessment results that can be addressed in the curriculum and field experiences. Also, our initial results indicate early childhood and elementary program students may need a greater focus on classroom assessment literacy. Better preparing teacher candidates for classroom assessment will in turn help teachers assess student learning and improve student achievement. Currently, the results indicate no significant change in assessment literacy as a result of course work in assessment. As DeLuca and Bellara noted, one possible problem to examine is the alignment of the content in these classes the assessment standards. Another element to consider, as Alkharusi's, et. al. (2011) research suggests, is the addition of a field-based experience component to the assessment courses allowing pre-service teachers opportunities to immediately apply the content gained in the course to actual classroom situations with students. Further study is needed to determine why the participants from the pre to post questionnaire do not demonstrate significant gains. The data collected will serve as a catalyst for change as we continue to examine the assessment literacy of our pre-service teachers.

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