

Preservice teachers' impact on P-5 student learning

1. Purposes

The purpose of this study was to systematically investigate preservice teachers' impact on P-5 student learning. The research questions were: a) Is there difference in P-5 student learning outcomes after a unit instruction by preservice teachers? and b) Is there difference in P-5 student learning outcomes after a unit instruction among preservice teacher tiers, school economic statuses, student grade levels, or subject areas of the content taught by the pre-service teacher?

2. Theoretical Framework

Literature constantly calls to attend to the impact of teacher education programs. In the report of the Teacher Preparation Research study prepared for the U.S. Department of Education, Wilson, Floden, & Ferrini-Mundy (2001) provide a recommendation specifically related to P-5 student achievement, stating: "...design and reporting of research on teacher preparation must be explicit about connections to improving student achievement... From the design of studies to the interpretation and reporting of results, that connection should be obvious. (pp. 33-34).

Some studies report findings in this area. Clark (2012) investigated the impact of preservice teachers on both mathematics achievement and attitudes of P-5 students at a Colorado School. The preservice teachers were provided opportunities to focus on the individuality of the learners and their prolonged engagement with their students allowed them to move beyond their focus on their own processes, materials, and strategies. Consequently, outcomes indicated that the preservice teachers became more aware of the level of questioning and expectations of their young students, leading them to adjust these levels to help students achieve at a higher level.

To emphasize the importance of focusing pre-service training on the P-12 student outcomes, Darling-Hammond (2003a) stresses teachers' influence on student achievement. The

Oregon teacher licensure system also emphasizes student outcomes. The focus becomes centering on student learning and encouraging the candidates to assess and foster the students' learning progress. As a result, teaching practices change and gains are shown in students' learning (Schalock, Schalock, & Myton, 1998).

3. Methods

This quantitative study utilized authentic student learning outcomes as a result of unit instructions that preservice teachers gave to P-5 students in the field. The study lasted a semester and posed little research effect on P-5 students and preservice teachers, as the data were parts of a required assignment of the courses that focus on field experience and that preservice teachers take in the program.

Settings

The settings included a P-5 teacher education program at a university in the southeast region in the U.S. and 15 P-5 schools where we placed preservice teachers in classrooms and were within a 60-mile radius of the campus. Preservice teachers are in junior or senior years and enroll in the three successive practicum tiers, Methods I (MI), Methods II (MII), and Student Teaching (ST). They are assigned to a classroom working with university supervisors and cooperative teachers. Each classroom has around 15 to 30 students.

Participants

We included 1,640 P-5 students in this study. These P-5 students were selected because they were taught by 68 preservice teachers who responded to our request and submitted P-5 students' pre- and post- assessment results. Responding preservice teachers were among a total of 211 who enrolled in the program and were recruited, with a responsive rate of 31%.

4. Data Sources

Pre- and post- assessments designed and administered for unit instructions by the three practicum tiers were the sources of data that evidenced P-5 student learning outcomes for this report.

Data Analysis

To make the data more comparable across the variety of conditions included in this study, we employed normalized gain scores before analysis (Bao, 2006). Afterwards, two analysis approaches were used: a *t* test to examine differences in the normalized gain scores and a set of regression tests to investigate the differences in the student learning outcomes among practicum tiers, subject areas, social economical statuses, and grade levels.

6. Scholarly Significance of the Study

Results

Inquiry Question #1: Results showed that the mean normalized gain score was $M = 65.06\%$ ($sd = 38.79$, $n = 1640$), and this level of gain was statistically significant at the .05 level ($t = 67.93$, $df = 1639$, $p < .05$, $95\% CI = 63.19, 66.94$). This finding suggests that P-5 students were benefiting from pre-service teacher unit instruction and demonstrating improvement over their pre-assessment scores.

Inquiry Question #2: Mean normalized gain scores were presented for each of these four factors in Table 1. The regression models employed were described below in Table 2. (Due to word limits, we will include tables and interpretation of the findings in the final version.)

Discussions and Conclusion

The results suggest that P-5 students perform equally well taught by pre-service teachers in Methods I, Methods II, and Student Teaching. Four inferences were drawn. First, the field experience in the unit instruction is equally effective across all tiers. Second, regardless of

subjects, preservice teachers have significant impact on P-5 student learning outcomes. Third, pre-service teachers' unit planning and instruction contributes to P-5 students' learning regardless of the P-5 students' social economic backgrounds. Finally, P-5 students benefit from pre-service teachers' unit instruction regardless of which grade level they are in.

We recommend that teacher education programs devote efforts to teaching pre-service teachers how to analyze and use the assessment results to their instruction. We also recommend that future research focus on pre-service teachers' impact on the P-5 students in the schools. Finally, more data should be collected systematically in regards to the preservice teachers' impact on their students' learning during their practicum experiences.

References

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