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# EXAMINING AN ASSUMPTION OF LINKAGE BETWEEN LESSON PLANNING AND IMPLEMENTATION

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It is often suggested that preservice teachers who are trained to develop a lesson plan will, with equal acumen, be able to implement that plan. The purpose of this study was to test this assumption. Twenty-six preservice teachers in an early childhood practicum developed and implemented a mathematics lesson plan. The lesson plans were evaluated according to specific criteria set forth in the National Council of Teachers of Mathematics' *Curriculum and Evaluation Standards for School Mathematics* using a weighted checklist. The implementation of each plan was also assessed using a Likert Scale reflective of similar criteria. A correlation between the scores on the lesson plan checklist and the scores on the observation checklist was not significant.

The findings suggest that it cannot be assumed preservice teachers will automatically make the transition from written lesson plan to classroom implementation of those plans.

Lesson planning is an essential facet of teacher preparation, necessary for even the most experienced teachers in order to ensure direction to instructional method and bolster teacher confidence (McCutcheon, 1982). It has been suggested that the ability to plan instruction effectively can determine the success or failure of a teacher (Arnold, 1988). A study by Carter and Lee (1989) revealed that preservice teachers saw poor planning on their part as the major reason for failure of a lesson. It is no surprise then, that a large proportion of instructional time in most teacher education programs is spent on the writing of objectives, developing the content, and explaining the theoretical basis of planning (Kauchak & Eggen, 1989; Neely, 1986).

Hautala (1989) describes the lesson plan as a necessary instructional guide and warns that the transition from planning to successful implementation is a difficult one. The National Council of Teachers of Mathematics (1991) reiterated the importance of bridging

the gap between theory and practice in the recently published *Professional Standards For Teaching Mathematics*.

There are indications however, that teacher education programs have failed to effectively establish the link between planning and implementation. According to Jarchow (1984), preservice teachers do not understand the relationship between instructional planning and actual teaching. Similarly, McIntyre, Norris and Copenhaver (1981) found that while most preservice teachers can write objectives, less than half communicate these objectives effectively to students. Neely (1985; 1986) found however, that preservice teachers can be trained in methods to improve not only their lesson planning, but the implementation of the lesson as well. Perhaps the most important key to improving these skills lies in understanding the relationship between lesson planning and implementation. If lesson planning is intended as a way of organizing theory for its practical application, then

lesson implementation would be the classroom translation of this organization into practice.

While the importance of the connection between lesson planning and implementation has been argued, it remains unclear to what degree the quality of the plan impacts the implementation of the lesson. The present study sought to determine if the assumption of linkage between lesson planning and lesson implementation is valid.

### Methodology

#### *Subjects*

Subjects in the study were 24 female and 2 male preservice teachers enrolled in an early childhood practicum, a requirement of the teacher education program at a southern university. All 26 of the subjects had met the requirements for admission to the program and had had some exposure to lesson design and implementation prior to the practicum experience.

#### *Instrumentation*

Two checklists were developed specifically for use in the study: a Lesson Plan Assessment Checklist (LPAC) (see Appendix A) and a Lesson Observation Checklist (LOC) (see Appendix B). Both instruments are reflective of specific National Council of Teachers of Mathematics (NCTM) standards described in *Curriculum and Evaluation Standards for School Mathematics* (1989). The assessment checklist consisted of five, categorized sets of weighted, observable indicators. A score on the assessment checklist could range from 0 to 34. The higher the score, the more reflective the plan of the NCTM standards. The observation checklist consisted of 10, observable, teacher/student behaviors assigned a value along a 5-point Likert scale, reflective of the degree to which the behavior was apparent. Values ranged from 1 (not at all apparent), to 5 (very much apparent). A score on the observation instru-

ment could range from 10 to 50.

#### *Procedure*

Each subject developed and then implemented a mathematics lesson, in a kindergarten classroom, with a small group of children of mixed ability. The development and implementation of the plan was subsequent to formal exposure to criteria set forth in the National Council of Teachers of Mathematics' (NCTM) *Curriculum and Evaluation Standards for School Mathematics* (1989). In addition, subjects participated in a review of the principles of lesson planning and implementation.

The quality of the written lesson was determined using the Lesson Plan Assessment Checklist (LPAC). The implementation of the lesson was rated by a single, trained observer using the Lesson Observation Checklist (LOC).

A Pearson product-moment correlation was calculated using the scores on the observation and assessment checklists. In addition, the observer of the lesson implementations made qualitative observations in the form of written notes, supplemental to the numeric ratings. These comments were grouped into four categories. Category 1 comments were classified as positive, teacher-related, and concerned observations of effective questioning techniques, integration of concepts, and extending the lesson when appropriate. This category also included the effective use of manipulatives and acknowledgement of individual differences.

The second category of comments was labeled negative, teacher-related, and dealt with ineffective questioning techniques, lack of flexibility and failure to clarify the purpose or objective of the lesson, and ineffective use of manipulatives.

Negative, student-related comments were placed in Category 3. These comments reflected a lesson that failed to hold students' attention or lacked active, student involvement.

Category 4 comments were labeled positive, student-related and included positive comments on student cooperation, creative use of manipulatives, and students' relation of the lesson to prior learning.

### Results

The means and standard deviations for the assessment and observation scores are presented in Table 1. There was no significant correlation between the lesson plan assessment and observation scores.

As would be expected, more positive comments were made on Lesson Observation Checklists (LOC's) that had higher scores. That is, 32 positive comments were made on LOC's that had scores from 40 to 50, but only 1 positive comment was made where the LOC score fell below 40. Negative comments indicated the same parallel relationship. More negative comments were made on those LOC scores that fell below 40 than those that were 40 or above. Sixteen negative comments were tallied for LOC scores below 40, with only 2 negative comments for LOC scores 40 and above.

### Discussion

The lack of significant correlation between the assessment and implementation scores and a consideration of the observer's comments suggest that within the constraints imposed by the study's design:

1. Assumptions should not be made about a preservice teacher's ability to imple-

ment a lesson plan based on the quality of the written plan.

2. Preservice teachers may not be making the link between organization of a lesson and its implementation.
3. More time should be spent in facilitating preservice teachers' abilities to make the transition from the proposal of a lesson to its implementation.
4. In some cases preservice teachers may be more adept at implementing a lesson than providing an adequate written description.

Examination of observer comments suggests a direct relationship between number of comments made, both teacher-related and student-related, and the score on the Lesson Observation Checklist (LOC). An analysis of the observer's written comments provided a qualitative reiteration and extension of the quantitative results. The more successful lessons tended to be more process-oriented and student-centered while less successful lessons were inflexible, often procedurally vague, and teacher-centered.

The findings of this study have several implications for teacher education. An inordinate amount of time is given to the process of constructing a lesson plan, assuming that quality construction will be reflective of the effectiveness of implementation. If, however, teacher education programs are to effectively link theory and practice, opportunities for actual implementation and critical analysis of lessons need to be increased in teacher

Table 1  
Mean and Standard Deviation for Assessment and Observation Scores

	Mean	SD
Assessment Scores	21.269	6.233
Observation Scores	40.654	6.474

Table 2  
Categorical Frequency of Observer Comments

	Number of Comments
Category 1	
Positive Teacher-Related	20
Category 2	
Negative Teacher-Related	13
Category 3	
Negative Student-Related	05
Category 4	
Positive Student-Related	13

preparation courses. Small group work in supervised lesson planning with time for role-playing of the implementation of the lessons may also be beneficial to preservice teachers. Similarly, the use of case analyses and field-based practicums would provide the meaningful classroom context in which lessons could be developed, implemented, and assessed.

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### Correction Note

In the Vol. 112, No. 4 issue, please note the following correction for the article "A Study on the Kettering School Climate Scale" (page 637, line 30): "The first-order promax rotated factors . . ."

Appendix A

ID \_\_\_\_\_

LESSON PLAN ASSESSMENT CHECKLIST

**Rationale:** (4 pts.)

Acknowledges/Recognizes significance of the NCTM Standards \_\_\_\_\_

**Objectives:** (3 pts./)

- 1. Reflective of specific Standard(s) \_\_\_\_\_
- 2. Key Words: explore, justify, solve, classify, construct, use, discuss, describe, develop, investigate, etc. \_\_\_\_\_
- 3. Developmentally appropriate \_\_\_\_\_

**Materials List:** (1 pt./)

- 1. Appropriate materials \_\_\_\_\_
- 2. Adequate supply \_\_\_\_\_

**Description of Lesson:** (2 pts./)

- 1. Student-centered (active instruction) \_\_\_\_\_
- 2. "Hands-on" activities for students \_\_\_\_\_
- 3. Allows for "risk-taking" \_\_\_\_\_
- 4. Cooperative learning experiences \_\_\_\_\_
- 5. Appropriate progression \_\_\_\_\_
- 6. Includes supplementary/supportive experiences \_\_\_\_\_
- 7. Students made aware of lesson objective \_\_\_\_\_

**Evaluation:** (1 pt./)

The lesson evaluation is attempting to ascertain:

- 1. Depth of student's verbalizations \_\_\_\_\_
- 2. Student's confidence level \_\_\_\_\_
- 3. Degree of student's involvement physically/cognitively \_\_\_\_\_
- 5. Student's mastery of stated objective \_\_\_\_\_
- 6. Degree of experimentation by students \_\_\_\_\_

TOTAL \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_

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