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ABSTRACT

Student teachers' thoughts about teaching can shape, foster, or impede their growth toward expert pedagogy. This study examined the thoughts about teaching of two groups of student teachers--45 graduate and 63 undergraduate students. The professional coursework of both groups was very similar, with one exception--graduate students had no practica experiences in elementary classrooms before student teaching. Questionnaires were administered to all student teachers before and after the student teaching placement. Findings support the strength of the undergraduate teacher education program. Prior to student teaching, the two groups were very similar in their thoughts about teaching. Following the experience, undergraduates revealed different kinds of thoughts than graduates. For example, graduate students continued to reflect concern about their basic teaching skills, lesson planning, and classroom management; undergraduates were more confident and more sophisticated in their thinking about classroom pedagogy and were better able to reflect on whether children learned from their teaching. Based on informants' responses, it was concluded that practica experiences help new teachers move more quickly to mature thoughts about both teaching and children's learning. (LL)

An Investigation Into the Influence of Classroom Practica Experiences on Student Teachers' Thoughts about Teaching

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Student teachers' thoughts about teaching are of great importance. Their thoughts can shape, foster, or impede their growth toward expert pedagogy. Inquiries into the thoughts of student teachers can provide invaluable insights about the impact of teacher education programs and suggest ways that preservice programs might be improved to better prepare new teachers.

Theoretical Background

Several models of teachers' professional development help explain how novice teachers evolve in their thinking about teaching (Berliner, 1986; Fuller, 1969; Kagan, 1992). In the earliest stages of the development, novices self-consciously think about themselves as teachers. Typical concerns at this initial stage are whether they can project themselves as classroom leaders, learn classroom management strategies and assume the general responsibilities of classroom teachers. In the second stage of teacher development, novice teachers think more critically about planning and implementing lessons. At this stage they think about ways of presenting information clearly, organizing their classrooms for successful instructional activities and asking effective classroom questions. In the third and final stage of teacher development, novice teachers' procedural and pedagogical skills have become more automatic, and the emerging professionals can better attend to children's learning. They focus their thoughts on whether they have successfully helped children learn. These models of teacher development trace novices' growth in thinking from issues about classroom routines and management, to instructional skills, and finally to more complex

and sophisticated thoughts about children's learning.

One of the most important of the current reforms in teacher education is the improvement of preservice classroom practica experiences (Goodlad, 1990 ,1991). It is widely recognized that teacher education methods courses would be more useful and intellectually demanding if the courses were closely integrated with genuine classroom teaching. Such classroom practica would provide opportunities for novices to work alongside experienced and expert teachers for extended periods. The experience of teaching with skilled professionals will accelerate novices' learning of pedagogical skills and strategies that would not easily be acquired in the traditional one semester of student teaching. In some teacher education institutions professional coursework and practica reform is being implemented through a fifth year of internship in schools, and in other institutions practica reform has meant required practica hours throughout students' undergraduate studies. The overall purpose of improved and extended practica will be the integration of general and subject specific pedagogy with the practical realities of everyday classroom life.

Contemporary reforms in teacher education also offer new roles for public schools and teacher education institutions. Specifically, schools and institutions of higher education will work more collaboratively in preparing preservice teachers. Expert classroom teachers will have greater impact in training new teachers. College faculty will work more closely with classroom teachers by sharing current research and theory on curriculum and instruction,

and helping both the novices and experts reflect on their curricula, teaching and children's learning.

The improved practica experiences and restructured roles for classroom teachers and college faculty will provide longer and richer learning experiences for prospective teachers. Reformers believe that the integration of theory with classroom practice will improve new teachers' understanding of themselves, their roles as educators, classroom pedagogy, and children. Ultimately, integrated practica experiences will affect novice teachers' thinking so that they will acquire a greater depth and breath of knowledge about teaching.

Purpose of the Study

In this study we examined the thoughts about teaching of two groups of student teachers. These two groups of teachers, one undergraduate and the other graduate, were nearly equal in their formal preparation to teach but with one exception - the graduate students had no practica experiences in elementary classrooms before actually student teaching. Of course, we realized that the two groups were different in their ages, maturity and perhaps even their motivation to teach, however, the actual teacher education curriculum and requirements differed very little between groups. Consequently, we investigated differences, which may be the effect of practica, in the two groups' thinking about teaching. More specifically, we examined the following questions:

1. Do student teachers who have participated in extensive practica think differently about student teaching than those who have not?

2. Do student teachers' thoughts about teaching change in predictable ways as suggested by developmental models of teacher thinking?

3. What patterns emerged in the thinking of student teachers over the course of their student teaching experiences?

Method

Subjects

Forty-five (45) graduate and 63 undergraduate student teachers participated in this study. The two groups of students had many similarities in their teacher training and preparation. Among these common educational experiences were the following: Both groups of students were matriculated students at the Sage Colleges and completed their student teaching in the local elementary schools in the Capital District of New York. Both groups were required by state education regulations to student teach at primary and intermediate grade levels. For the most part, their professional coursework was very similar, and in many cases their courses were taught by the same faculty. For consistency of teacher preparation, all faculty presented comparable models of elementary school pedagogy (eg., integrated reading and language arts, child-centered learning activities, cooperative learning, etc.) to both groups of prospective teachers.

However, one major difference existed between the two teacher education programs - the graduate program did not require its students to complete

classroom practica hours before student teaching, but at the undergraduate level all the students fulfilled many practica hours in local elementary schools. For example, during their first 2 1/2 years of education courses the undergraduate students observed and participated in at least 120 hours of work with elementary children; in most of these practica experiences the undergraduates were in local urban elementary classrooms. Last year students also provided tutoring in after-school children's programs at a nearby public housing project or in a "community schools project" at one of the neighboring elementary schools. In addition to the 120 hours of unsupervised practica, all the undergraduates completed a college supervised classroom experience, typically taken during the spring semester of their junior year. In this supervised practicum they taught small group and whole class lessons.

The graduate program in teacher education does not require classroom practica for its students, although there were a number of good reasons for this omission. Most of the graduate students held outside employment and had family responsibilities. A great many of the graduate students worked full-time and some were even professionally employed in other occupations (e.g., personnel, construction, business, etc.). Many of the graduate students were parents with school-aged children. These varied demands of adulthood, which most of the traditionally aged undergraduate students did not have, precluded the college from requiring actual classroom experience for its students in the graduate program.

There were some minor differences in the professional coursework of the

two groups. Coursework in the undergraduate program consisted of 29 credits in education, with eight of these hours in language arts, and followed by 14 hours of student teaching. In the graduate program the students completed 24 hours of credits in instructional theory, school organization and teaching methods in addition to 14 credit hours of student teaching. The graduate program also required six hours of study in reading and the language arts, although many of the students had much more. The major difference in coursework between the two programs was in classroom management; the undergraduate program required a management course but in the graduate program it was only an elective with very few students taking the course because of other curriulum requirements. The two programs were nearly identical in all other curricula requirements.

Data Collection

We collected the data for this study during the fall semesters of 1991 and 1992. On the first night of each fall semester and prior to student teaching, we administered a questionnaire to all student teachers. Several months later, after they completed their student teaching placements, the student teachers answered the second questionnaire. The first questionaire contained the open-ended question - **What is your greatest concern about student teaching?** Later, after student teaching, the student teachers responded to the two additional open-ended questions - **What was your most encouraging moment student teaching? What was your most discouraging moment student teaching?** Borrowing in part from the recent work by Reynolds (1992), we

examined all their written responses according to whether the student teachers provided written propositions pertaining to their personal development as teachers, general classroom pedagogy (planning, management, and classroom procedures), subject specific pedagogy (ways to teach reading, math, science, etc), or concerns about children's learning. These areas of concern correspond broadly to stages of teacher development identified in research literature about teacher thinking.

We coded all the student teachers' responses to the three questionnaire items analyzed in this study. One of the researchers coded all of the responses, and then, to establish validity of coding, two other researchers independently reanalyzed responses from sets of ten pre and post questionnaires that were randomly selected. These ten sets of questionnaires provided a pool of 30 response items for cross checking (each set consisted of one question before student teaching and two questions after student teaching), and the coders were unaware of which items belonged to graduate or undergraduate student teachers. Comparison of the three researchers codings for all 30 of these randomly selected items revealed that we coded the questionnaire items identically 90% of the time. Because inter-rater reliability was so high, we did not reexamine those items where we differed.

Criteria for coding student teachers' responses to each of the three question items were the following:

1 = Ability to teach

We coded responses as 1 when teachers described feelings about learning to become a teacher, obtaining success in the student teaching placement; being all that they can be as a teacher. The emphasis of responses in this category are on the student teacher's reflection on her/his ability to teach.

Examples of responses that were coded 1 are the following:

* "Will I be effective?"
* "When I was left alone with the class and actually taught by
* myself and it went well"
* "Being too shy to teach in front of observers"
* "Keeping up with the workload and doing a great job"
* "I felt fulfilled..."

2 = General planning of lessons and units, organization, lesson implementation and management

We coded responses as 2 when the student teachers described feelings about lesson/unit planning, classroom management, and their implementation of lessons.

Examples of items that were coded 2 are the following:

* "Classroom management"
* "When students were off task and not paying attention"
* "When my lessons seemed to fall apart"
* "I rewarded the class with candy and one of the children got sick and didn't make it to the bathroom"
* "Planning lessons that allow for different learning styles"

3 = Subject Specific Pedagogy

We coded responses as 3 when the student teacher wrote about planning or implementing subject specific lessons, such as the following:

* "Not being able to explain how to do math"
* "Developing a reading curriculum for a special needs student"

4 = Student learning in cognitive or affective areas

Items were coded as 4 when the written response focused on children's growth. This item differed from 1 because the emphasis is on children and what they have learned. Examples of items in this category are:

* "When a child learned something and was excited"
* "When you couldn't reach the children and they didn't understand"
* "When a child said I made everything clear that he had never understood"
* When one of the special education children got angry, lost control, and threw a chair"
* "When children turned in work I knew was not their best"

5 = Concerns about placement, cooperating teacher, or college supervisor

Two types of items fell within this category. The first were those responses that discussed the structure of the student teaching experience such as having two 7-week placements. The second kind of response that we coded as a 5 were comments that referred to the actions of the cooperating teacher or college supervisor. Examples of items in this category are the following:

* "The first phone call from my cooperating teacher and I knew I was going to
enjoy teaching and learn a lot"

* "When my cooperating teacher didn't help"
* "I was very discouraged when my supervisor never appeared during my solo week"
* "When my cooperating teacher took credit for a project that I put together by myself"

6 = Comments of Others

We coded responses as 6 when they referred to statements that others had said. The student teachers referred to specific statements of their cooperating teachers, college supervisors, children, and parents. Examples are the following:

* "Feedback from others"
* "When my supervisor evaluated me"
* "When a child from the other class said, 'Stop, here comes the teacher"
* "My three way evaluation"

0 = No response to Item

Analyses

After coding and checking for coding reliability we prepared descriptive statistics on each of the question items. Because the questionnaires provided nominal data, we prepared frequency rankings for each of the six categories in the coding system. Frequency rankings were prepared separately for the graduate and undergraduate students.

To identify items where the two groups differed we first visually examined the frequency rankings of all three questions. Then where differences

appeared to exist, such as on questionnaire items 2 and 3, we computed *chi squares* to determine if the observed differences between groups were statistically significant.

Results

Frequency rankings of the student teachers' written responses to the first open-ended question (What is your greatest concern about student teaching?) suggest that both groups thought similarly about student teaching. The undergrads and graduate student teachers answered alike, so much so, the first and second rankings in frequency of the two groups were identical. The undergraduates and graduates wrote responses that reflected concern about their general ability to teach, and second in frequency, they wrote about their general ability to plan and implement lessons and manage a classroom of children. Specifically, 39.7% of the undergraduates and 46.7% of the graduates composed responses reflecting thoughts about their overall ability to teach; 24.4% and 34.9% of the undergrads and graduates, respectively, wrote answers about their general pedagogical and management skills. Table I displays the frequency rankings and percentage of student teachers's answers within the specific categories of the coding system.

Table I

What is your greatest concern about student teaching?

Undergraduates			*Graduates*		
Rank	Category	Percent(N)	Rank	Category	Percent (N)
1	2	39.7% (25)	1	2	46.7% (21)
2	1	34.9% (22)	2	1	24.4% (11)
3	3	3.2% (2)	3	4	11.1% (5)
4	4	3.2% (2)	4	5	8.9% (4)
5	5	3.2% (2)	5	0	4.4% (1)
6	6	3.2% (2)	6	3	2.2% (2)
			7	6	2.2% (2)

Differences between the two groups appeared when we calculated the frequency rankings of student teachers' responses to question item #2 (What was the most encouraging moment of student teaching?) First, there was great difference in the frequency rankings and percentages of undergraduate student teachers who wrote answers that reflected concern about children's learning to that of the graduate student teachers. For the undergraduates, 41.3% of their responses suggested concern about children's learning, but only 28.9% of the graduates answered similarly. *Chi square* comparison of this response item revealed that the two groups did indeed answer this question differently ($X^2 = 4.14$; $df = 1$; $p < .05$). The second place rankings of the undergraduates and the graduates also differed; 19.0% of the undergraduates wrote responses reflecting

concern about what others thought about their teaching, but the percentage of graduates writing responses in this coding category was much greater with 31.1% of the graduate group responding about what others thought of their teaching as their most encouraging moment. A third difference in the thinking of the two groups is also found in the number of student teachers who chose not to respond to this item at all; 14.3% of the undergraduates failed to respond to this question but twice this percentage of the graduates chose not to respond and omitted answering the second question entirely. Table 2 identifies the frequency rankings and percentages of responses between of undergraduates and graduate student teachers on the question item pertaining to their most encouraging moment in student teaching.

Table 2

Rankings,Percent and Number of Responses in the Coding Categories

What was your most encouraging moment student teaching?

Undergraduates			*Graduates*		
Rank	Category	Percent(N)	Rank	Category	Percent (N)
1	4	41.3% (26)	1	6	31.1% (14)
2	6	19.0% (12)	2	0	28.9% (13)
3	0	14.3% (9)	3	4	20.0% (9)
4	2	9.5% (6)	4	2	11.1% (5)
5	1	9.0% (5)	5	1	6.7% (3)
6	3	6.3% (4)	6	3	2.2% (1)

Frequency rankings of the two groups' responses to question item #3 (What was your most discouraging moment student teaching?) suggested that the two groups also thought differently about this item. The most frequent kind of response to this question revealed that the undergraduates focused on children's learning or lack there of. However, the same category was fifth in rank for the graduate students. *Chi square* comparison of category item 4 for this question did not, however, indicate statistical significance at the .05 level of probability (X^2 - 2.59, df = 1). The second highest response category was the same for the two groups. Both undergraduates and graduate student teachers often wrote about comments from their cooperating teachers, college supervisors, other teachers, and parents. Table 3 identifies the ranks, frequency and percentages of responses of the two student teaching groups to the question what was their most discouraging moment student teaching.

Table 3

Rankings, Percent and Number of Responses in the 6 Coding Categories

What was your most discouraging moment student teaching?

Undergraduates			*Graduates*		
Rank	Category	Percent(N)	Rank	Category	Percent (N)
1	4	23.8% (15)	1	0	28.9% (13)
2	2	23.8% (15)	2	2	20.0% (9)
3	6	15.9% (10)	3	6	17.8% (8)
4	0	15.9% (10)	4	5	15.6% (7)
5	5	14.3% (9)	5	4	11.1% (5)
6	1	4.8% (3)	6	3	6.7% (3)

For additional insights into the thinking of the two groups, we combined responses to questionnaire items 3 & 4 as seen in Table 4. These two questionnaire items elicited the student teachers' best and worst thoughts about student teaching. Analyses of their responses to these combined questions provided further evidence for the difference in thinking between the two groups. Specifically, the undergraduate group wrote more responses pertaining to children's learning than the graduate group did (33% vs 15.5%). Chi square comparisons supported our view that the two groups differed significantly in their answers to these two questions ($x^2 = 6.76$, $df = 1$, and $p < .05$).

Second and third in frequency rankings of the combined answers of their most encouraging/discouraging moments were responses that discussed comments of others and concerns about their planning, teaching, and management. The frequency in which both groups referred to the comments of others was unexpected. Although we anticipated some responses in this category, the number of student teachers who wrote about what others said about their teaching was surprising. Finally and curiously given the undergrads high response rate, the graduate group did not respond to these questionnaire items 28% of the time.

Table 4

Sum of Responses to Questions 3 & 4 - Rank, Percent and Frequency of Student Teachers' Responses

Undergraduates			*Graduates*		
Rank	Category	Percent(N)	Rank	Category	Percent (N)
1	4	33.0% (41)	1	0	28.8% (26)
2	6	17.7% (22)	2	6	24.4% (22)
3	2	16.9% (21)	3	2	15.55 (14)
4	3	11.2% (14)	4	4	15.5% (14)
5	5	7.2% (9)	5	5	7.7% (7)
6	0	7.2% (9)	6	3	4.4% (4)
7	1	4.0% (3)	7	1	3.0% (3)

Discussion

In this study we examined the thoughts about teaching of two groups of student teachers. The two groups, one undergraduate and the other graduate, differed in their preservice practica experiences in elementary classrooms. The undergraduates had acquired many hours of practica, but the graduates, for a variety of reasons, had none. We first investigated whether undergraduate student teachers thought differently about teaching than the graduates. Our results indicate that immediately prior to student teaching the two groups appeared very similar in their thoughts about teaching. However, after student teaching the undergraduates revealed different kinds of thoughts about teaching than the graduate students. When answering our questionnaire items the undergraduate group more frequently wrote comments pertaining to children's learning than the graduates. But the graduates students, even after student teaching, continued to write comments to the questionnaire items, which reflected concern about their basic teaching skills of lesson planning and classroom management.

Second, we investigated whether student teachers' thoughts about teaching would change in predictable ways as suggested by developmental models of teacher thinking. Other research by Berliner (1986), Fuller (1969), and Kagan (1992) suggests that as novice teachers obtain classroom experience they move from initial concerns about self and basic teaching competencies to more sophisticated concerns about children's learning. Our data analyses indicate that

the undergraduate teachers moved in these very same predicted directions. The undergraduates changed from thinking about whether they possessed the ability to teach and manage a class to actually thinking about children's learning. However, the graduate student teachers did not change in their thinking about teaching, and even after three months of student teaching, the graduate group remained fixed in their written thoughts on management and basic skill issues.

In the third and final question of the study we asked if other patterns emerged in student teachers' thoughts about teaching. We were surprised about what we learned here because we did not anticipate the frequency in which both groups of student teachers would write about what others said about their teaching as being their most encouraging and discouraging moments of the teaching experience. The two groups of student teachers revealed themselves to be highly impressionable about what others said. So much so, that the graduate group wrote more frequently about what others said about their teaching than about their basic teaching skills, management, or children's learning. Even the undergraduate students, who exhibited growth toward expert pedagogy, also displayed considerable concern about what others said about their teaching. Typical written responses that reflected these concerns about what others said were the following: "...learning from my supervisor and cooperating teacher that I'm going to make a wonderful teacher," and "..when I received the hats off award from the school for being a caring and effective 5th grade teacher."

The findings of this study add further weight to the outcomes of two of our

previous studies of student teachers at this small independent college. Two years ago (Gormley, Hammer, McDermott, & Rothenberg, 1991) found that both groups of student teachers at the college, undergraduate and graduate, felt very confident about their abilities to teach, but the undergraduates grew more confident over the course of two student teaching experiences. At that time we suspected that the undergraduates' high self-esteem might be over-inflated and unrealistic. However, last year we (Gormley, Hammer, McDermott, & Rothenberg, 1993) compared and contrasted the evaluations of cooperating teachers about the ability of the undergraduates and graduate students to teach, and the results of that analysis indicated that the cooperating teachers perceived the undergraduates to be better prepared than our graduate group. Now the findings of this present paper about our student teachers' thinking about teaching further support the strength of the undergraduate teacher education program. The undergraduates are not only more confident, but they are also more sophisticated in their thoughts about classroom pedagogy- specifically, they are more likely to reflect on whether children learn from their teaching than our graduate group is able to do.

One of the implications of this study is that improved classroom practica experiences, which our undergraduates have, accelerate novice teachers' growth toward expert pedagogy. Practica experiences, especially those where novices receive extensive and varied classroom experiences and constructive evaluations about their teaching, help new teachers move more quickly to more mature

thoughts about their teaching and children's learning. In future studies we will examine whether our graduate group, when required to have practica experiences before student teaching, exhibit patterns of pedagogical growth that our undergraduates already display.

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