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ABSTRACT

        This study focused on preservice teacher' cognitions
and preconceptions about teaching. It examined what and how student
teachers thought about teaching as they began their experience, the
relationship between their thinking about teaching and their teaching
behaviors, and how their thinking about teaching changed over the
course of the experience. Eleven preservice secondary teachers were
followed through their student teaching program. The subjects were
required to keep a journal daily and to complete six topical papers
during the course of the program. Classroom observations were
conducted weekly. It was found that initially the student teachers
focused on the teaching situation (content, lesson preparation,
learning outcomes) and on their performance of these teaching tasks.
As they assumed more responsibility and tested their cognitive
construct against the realities they perceived, they discarded the
cognitive construct, focusing rather on survival concerns--classroom
control and coping with the demands of students. The change in
constructs was reflected in changes in observed classroom behavior.
Questions are raised for further research. (JD)

COGNITIVE CONSTRUCTS OF PRE-SERVICE TEACHERS:
RESEARCH ON HOW STUDENT TEACHERS THINK ABOUT TEACHING

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CONTEXT

Research on teacher thinking, "the ways in which teachers think about their work and . . . give meaning to these beliefs in the classroom (Tabachnick, et al., 1983, 4)," has contributed to our understanding of teaching and has provided a conceptual framework for examining teaching. The research focuses on how teachers think about teaching, learning and the classroom, "the knowledge teachers hold, how they organize that knowledge, and how various knowledge sources inform their teaching (Barnes, 14); the implicit theories (professional craft knowledge, Calderhead, 1987; practical knowledge, Elbaz, 1981; knowledge-in-use, Schoen, 1983) they bring with them to the study and practice of teaching; and the effect of these cognitions on practice. (See, for example: Calderhead, 1983, 1987; Clark and Yinger, 1977; Elbaz, 1981; Schoen, 1983; Berliner, 1986, 1988; Gage, 19-5; Hollingsworth, 1989; Trumbull, 1986; Harootunian and Yarger, 1981; Clark, 1988; Shulman and Elstein, 1975; Clark and Peterson, 1986; Shavelson and Stern, 1981; Doyle, 1977). The importance of the research lies in its ability to inform practice. "What teachers choose to do is directed in no small measure by what they think . . . and how they think is informed by their perceptions and the meanings they ascribe (Clark and Peterson, 1986)." These perceptions, as Trumbull (1986) points out, are influenced by the teacher's "theories-in-use, experiences, and tacit knowings (143)" and

find expression in the "judgments and interpretations that teachers make every day (Clark, 1988, 6)" and in what they do (behavior) in the classroom (Gage, 1975). Equally valuable is its potential for informing teacher preparation and in the long-run, for serving as a viable paradigm for examining teaching, one which, in concern with other schema, can contribute to a theory of teaching.

Due attention is being given to the examination of teacher thinking in-service. Of particular note is Berliner's (1986, 1988) continuing study of teachers and stages of development as they move from novice to expert, the internal criteria they use, the schema that guide their thinking and how they think about teaching. As Berliner (1986) and Calderhead (1983) have already learned, experienced teachers (experts: Berliner) have different images (schemata for looking at, thinking about) of teaching than novice teachers. Experienced teachers have more complex, interrelated cognitive schemata than novice teachers. They "know" more and "see" more than novices, but discriminate in what they attend to; and they are more able to use what they know and see to make sense of the classroom and to influence and control their teaching behavior. "These implicit theories are not," Clark contends, "neat and complete reproductions of the educational psychology found in textbooks or lecture notes. Rather, . . . (they) tend to be

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eclectic aggregatic.ns of cause-effect propositions from many
sources, rules of thumb, generalizations drawn from personal
experience, beliefs, values, biases, and prejudices (1988,
6)."

While this and like research proceeds on teachers in-
service, as Clark (1988) has noted, "Even if these forms of
teacher thinking are shown to be desirable for teachers, it
remains to be discovered how one might best help
inexperienced teachers." Indeed, as he argues, we don't
know much about the "preconceptions" pre-service teachers
bring to teacher preparation programs or what affect these
have on how they teach. However, if what teachers do in-
service is influenced by what they think about teaching
(Gage, 1975), what student teachers think about teaching is
a clue to the teachers they will become as well as a vital
link in the pre-service/in-service chain of research on
teacher thinking.

Calderhead (1983) looked at the developmental continuum of
thought from student teacher to novice teacher to
experienced teacher and found, as already noted, that
experienced teachers' schemata were informed by much more
"knowledge." Tabachnick (1983), who followed four student
teachers for two years through their first year of teaching,
found that student teaching did not lead to changes in the
perspectives they brought to the experience. On the other

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hand, Hollingsworth (1989), who studied fourteen pre-service teachers before, during and after their involvement in a 9-month graduate teacher education program, found that some of the participants changed (defined as learned program concepts or what teachers asked of them) as a result of their involvement. However, in the process, she emphasized the critical role of prior beliefs. Hollingsworth concluded, "preprogram beliefs served as filters for processing program content and making sense of classroom contexts . . . (168)." Veenman (1984) found "changes" in attitudes about teaching methods as subjects moved from pre-service to in-service teaching; subjects shifted from progressive to conservative views as they encountered the realities of in-service teaching.

Lortie (1975) has argued that pre-service teachers hold "subjective understandings" about education and that these prevent and/or hinder their learning of new understandings. Book, Byers and Freeman (1983) argue that teachers-to-be come to preparation programs with confidence (moderate to total) in their ability to teach (preconception). And Clark (1988) contends, "students begin teacher education programs with their own ideas and beliefs (preconceptions) about what it takes to be a success(7)." He then raises questions central to the area of study and to this study, "What are the preconceptions about teaching and learning held by our

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students? How should we take account of what our students
know and believe as we help them prepare to be teachers
(7)?"

PURPOSE

The research reported here focused on pre-service teacher
cognitions/preconceptions about teaching. Specifically, it
sought to examine what and how pre-service teachers thought
about teaching during student teaching, and the relationship
between their thinking about teaching and their teaching
behavior. The research questions that guided the study
included:

> .) What/How did the subjects think about teaching at
> the   beginning of the student teaching
> experience and as it   progressed?
>
> 2) Did this what/how thinking about teaching change
> over the   course of the experience?
>
> 3) What was the relationship between what the
> student   teachers thought and what they did
> (behavior) in the   classroom?

DESIGN AND PROCEDURES

To achieve these purposes, eleven pre-service secondary
school teachers were followed through their student teaching
experience. The eleven participants already possessed
bachelor's degrees and were enrolled in a post-baccalaureate
teacher preparation-certification program. Their
pedagogical preparation had been directed by a teacher

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educator, although their subject matter preparation had been directed by discipline specialists. The subjects were enrolled in student teaching and a concurrent seminar that met weekly. Both were directed by the same individual, a university supervisor. The six females and five males were prepared in five different subject areas: science, history, foreign language, English, and music, and were placed in seven different schools for their student teaching, i.e., 2 middle schools and 5 high schools. None of them had had prior teaching experience.

The study was exploratory and descriptive in design and followed the mandates of Sarason (1971) - about the importance of understanding teaching from within - of Harootunian (1980) - to focus on the teacher's, not the researcher's perspective - and of Fenstemacher (1979) - that researchers should look at the "subjectively reasonable beliefs of teachers (169)." And it took seriously the guidance of Harre and Secord (1972) that "the things people say about themselves and other people should be taken seriously as reports of data relevant to phenomena that really exist and which are relevant to the explanation of behavior (7)."

To that end, multiple data sources from the perspective of the subjects were sought. The subjects were required to keep a _journal_ during the student teaching experience. The

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experience included one week (more or less) in which the
student teacher observed and assisted the cooperating
teacher, and ten weeks of increasing responsibility for
teaching (at first one class; ultimately three classes).
The subjects were required to write in the journal daily,
addressing two issues in addition to any other contributions
they wished to make: (1) what they thought about/felt about
the day, and (2) what their primary thoughts and focus were
for the next day. As a part of the weekly seminar, the
subjects were required to complete six topical papers over
the course of the student teaching experience, three out-of-
class and three in class, one approximately every two weeks.
The out-of-class papers addressed (1) reflections on their
cooperating teacher; (2) reflections on themselves as
teachers, and (3) reflections on what they had gained as
student teachers. The in-class papers addressed (4) the
relationship between their pre-service preparation and in-
service (as student teachers) need, (5) why they had not
chosen teaching originally and why they now chose it as a
career, and (6) what they perceived to be their primary
role(s) as a teacher, and what they were about as teachers.

Classroom observations of each subject were conducted
weekly. The university supervisor, one of the researchers,
conducted three formal evaluation observation-feedback
sessions, using required forms and assessment instruments,

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and seven unannounced observational visits. Observational notes were collected about what the teacher was doing, how.

The three sources of qualitative data were analyzed individually, inductively, by subject and for the group. The journals and papers were examined for patterns of thought in terms of the research question: What and how did the student teacher(s) think about teaching, and did this thinking change over the course of the experience? These patterns (individual and collective) were then compared with the similarly analyzed observational notes in terms of the research question: What was the relationship between what the student teacher(s) thought and what they did, how, in the classroom?

FINDINGS

The subjects differed markedly from one another - in their thinking and behavior, and these differences were evident in their journal entries, papers and teaching. As individuals, they valued somewhat different things, attended to different aspects of teaching, and performed differently from one another in the classroom. They were unique individuals; and they retained their individuality throughout the experience. Nevertheless, in terms of the research questions, when the data were analyzed, patterns of response and behavior

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emerged and the patterns were characteristic of the subjects
as a group (10 of the 11).

The subjects approached the student teaching experience with
a clearly enunciated cognitive construct related to what
teaching would be like for them, how students would act and
react, and what it would be like in the classroom. The
construct was strikingly similar among group members,
varying only in detail. This beginning construct persisted
through the first few weeks of the student teaching
experience as they observed their cooperating teacher and
began to teach one class on their own. By the time each had
assumed responsibility for teaching more than one class, the
beginning construct had been replaced by an entirely
different one, also characteristic of the group. This
latter construct persisted through the conclusion of the
experience.

In the Beginning

At the beginning of the student teaching experience, as the
subjects thought about teaching and planned what they would
do in the classroom, they thought about teaching in terms of
how to teach and student outcomes (learning). "How to's"
dominated their thinking - how to involve students, how to
get students to participate, how to use the different
teaching methods they had learned about in their training,

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how to get students to think and grow. They saw schools as "about teaching" and they believed the key to success in teaching resided in the good lesson. Almost to a person they believed that teachers who had problems in the classroom, those who were not successful, could not, would not or did not prepare properly. The well-planned, well-thought out lesson ensured student involvement and learning. No other strategies would be necessary. In the words of one subject, "What I need to think about is good, solid lesson plans and what the kids are learning. Planning, Planning, Planning." Another wrote, "It took over four hours of planning for the lesson I taught today, but I believe my students learned." Yet another concluded, "I need to spend more time thinking of activities to make the content relevant and clear." Another opined, "Discipline will be achieved if lessons are relevant and meaningful to students."

They were confident that they would be successful. They saw themselves as well-prepared; they had the training, skill and knowledge to create and deliver good lessons. Student teaching was an opportunity to put this training, skill and knowledge into practice, and to hone the abilities they already possessed. As one student teacher framed it, "I am very anxious to teach. I hope all my planning pays off. The more I plan, the more ideas I have. I know I will

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succeed." And another, "I started on my lessons and I am anxious to see how well they will work. I feel I have good objectives, and know my material, and am prepared to present it."

The subjects "expected" to be liked by students. This was conceptualized in terms of comraderie and an esprit de corps, i.e., we're in this together, rather than as a personal relationship. They envisioned students as active, receptive, responsive learners, just waiting for them (as teachers) to come and help them bloom. They believed that if they worked really hard, applied what they knew about lesson construction, and showed students they were in this with them, i.e., that they cared about them and whether they learned, students would indeed bloom - they would participate, be involved, and most of all, learn. And they expected and anticipated (some more, some less) gratitude as a result of their efforts. They thought of themselves as having something to give to students - they would give it, and the students would be grateful to get it. One subject reflected, "I'm getting into education because of the kids. I have always thought I would enjoy working with them - working together on the same thing." Another offered, " As long as you have an interesting lesson and are basically nice and encouraging to students, then your students will be ever so nice to you and eager to learn." Another, "I must

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admit that I was naive about the role of teacher. I guess I
expected all my students to 'listen to my every word' and
that my profound wisdom would surely astound them." Yet
another captured the vision that the group had.

> "There I stood, waiting innocently for my first
> class of middle schoolers, knowing they would share
> my enthusiasm for music. Quietly they would file
> into my room and await my instructions. Gently, but
> firmly, I would guide them through the intricacies
> of the three-song song-sheet. The few uncertain
> singers would match pitches with me and be thankful
> for my assistance. We would marvel together at the
> magnitude and ingenuity of the world's most famous
> performers and easily create our own perfected,
> polished performances."

Thus did the student teachers think about teaching and the
classroom during the beginning weeks of student teaching.
And it was reflected in their planning for classes, in their
journals as they reflected on what had and would happen, and
in their papers.

They had what many would consider to be an idealized
construct about students, teaching and the classroom. They
brought this with them from their preparation, and perhaps
before, and it guided the way they thought about teaching in
the beginning of the experience. They approached their work
with enthusiasm and perceived the situation as gratifying.
One subject wrote, "I'm so excited. This will be a good
time." Another, "I taught today for the first time. What
fun it was." Another, "The day flies by. After a long

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weekend, I'm so glad to be back at school." And yet another, "What a day ! I'm exhausted, but happy. I love teaching and the students."

One other aspect of the beginning construct the subjects held bears noting. The subjects thought about teaching and the classroom non-contextually, i.e., as phenomena that existed in splendid isolation from the context in which they occur. They thought about "my classroom," "my lesson," "my students," and what "I will do with the students." Their sense of efficacy was high, but students existed only in the context of their classroom, school was their classes, teaching was what _they_ did. In one sense it was almost as if there was no school or community in which their classroom operated and no other experiences, stimuli or influences affecting their students other than those operating in their classrooms, under their control. Their cognitive construct of teaching was context-free.

Evolution of a New Construct

As the student teacher assumed total responsibility for at least one class, usually by week three, and thereafter, as they assumed increasing responsibility for more classes, up to three, the construct of teaching and the classroom they had held was discarded, and a new one evolved. The "old," beginning construct had provided a cognitive structure in

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which/from which to view teaching and the classroom. It framed what and how they saw. What happened to them as they taught, made retaining that construct impossible. It could not stand up to the "reality" they perceived when "on their own." They had nurtured a vision of what it would mean to teach, of how it would be in the classroom, for themselves and the students, and they found it not to be so. Everything they believed was brought into question. They discarded the beginning construct as they would shattered illusions thrown off in disgust and dismay, and with it, some of their confidence and sense of self as teachers.

The subjects "found" that the students were not "properly responsive," i.e, they did not participate willingly, did not become involved, and weren't necessarily eager to learn. One subject observed, "No matter how well I plan, some students just don't get involved and participate." Another noted. "My first class (today) was a little rough, but I had work for them to do. They just don't seem to care a whole heck of a lot." And yet another, "By the end of class I was feeling very resentful, because the majority of these kids just don't care. I was really upset."

Their initial reaction was consonant with their beginning cognitive construct. "I need to go back and rework my lesson. I must have missed something." "I'll have to work

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harder." They worked harder, but the situation did not
change.   The plaint of one of the subjects captured the
confusion and uncertainty of the group, "I keep trying to
figure out what I can do to turn them on and get them
interested, and I just don't know." They began to question
whether they were able to produce that "perfect" lesson that
ensured student involvement, et al., or whether they were
wrong in thinking that the "perfect lesson" was all that was
required for success. As one subject summed up her
frustration, "I spent seven hours on a 'perfect' lesson, and
the students' behavior wouldn't allow me to deliver it as I
had intended."

As they took on more responsibility for classes and were
left on their own, a new "reality" crept in. They began to
have some "problems" with some students. One subject wrote,
"The kids are getting more and more off-task, unmotivated,
and disruptive." Another, "(This is) the first day that I
have felt tired. I was not happy with the discipline of
class. Today I struggled." Another, "Today's the first day
I've been troubled. The student who's been testing me a
little more each day when I've not been in charge, finally
pushed me into calling him on his actions directly."
Another, "I feel so frustrated. It's such a shame that you
can't really be nice and have the kids take you seriously."
And yet another captured the bewilderment felt by the group.

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"T.G.I.F. The fifth period class was inattentive,
disruptive and wouldn't stay on task. I used proximity
control, eye contact, calling the students' names, and
isolation. I feel frustrated. How can I correct this?"

They perceived that students were "taking advantage" of
them, "pushing" them. And along with their uncertainty
about the efficacy of a "good lesson," they began to
question their initial conceptions of students. They no
longer saw students as active and responsive comrades in the
process of learning. Students were no longer included in
the "we"; they became "they". And where once student
problems had been defined in terms of teacher deficiency,
they were now seen as separate and apart from teaching and
the teacher. One subject confessed, "(I) tried to keep from
killing a student. They really push you. I'm really
looking forward to the weekend." Another, "I feel
absolutely horrible! Third period was a nightmare today!
(They really ᵤ_ied me.) They really get under my skin! I've
had a tension headache ever since." Another, "There are
three kids in fourth period who I really don't like. I know
that sounds awful, but they can be so nasty and have such
negative attitudes." And yet another, "I heard someone say,
'She's a bitch,' as they left class today. But whoever said
it will know for sure after I get through with him
tomorrow."

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Anticipating more discipline problems, the subjects worried about what might happen and reframed the way they thought about teaching and planning in terms of "what will I do if." More and more they focused on classroom control and saw discipline rather than student learning as the primary concern. They began to frame their lessons to ensure control and predictability. They eschewed experimentation in favor of regimentation and "prayed" they would not be pushed, challenged or tested by the students. One subject observed, "I must change the structure (of my class) before my (discipline) problems get too unmanageable to handle." Another, "I am finding out that it is necessary to interject some authoritarian characteristics to maintain order." Another, "Tomorrow I want to keep working on clarity of tasks, sequencing, and keeping closer physical contact with the students (to prevent problems)." Another, "The main concern for me is keeping everyone's attention so as to minimize problem behaviors."

The change in the way the subjects thought about teaching is most aptly illustrated by companion notations made by one student teacher. Early in the student teaching experience, the subject observed, "My cooperating teacher doesn't teach. He controls. Busy work - no real planning. He doesn't know from one day to the next what he will do. This is not teaching." By the fourth week of the student teaching

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experience this same subject declaimed, 'I can see now why Mr. gets control and gives them busy work so that he can spend his time monitoring. It's necessary to maintain order."

Beyond these, the construct the student teachers had held in the beginning was altered by the "reality" of the context in which found themselves. Contrary to the way they had thought about it, a lot of things affected what they did and could do in the classroom, and this added to their frustration and perceived loss of control. One complained, "This week is nothing but interruptions, half classes, cancelled classes! The week before the grading period ends, too! HELP!" Another, "How can you teach when they keep taking your kids?" Another, "And that dammed P.A. system - I just get going good - interruptions - I lose the kids." Another, "I only know too well how much time is taken up by notes, makeups, excuses, several permission slips, hundreds of dollars in receipts, grading, documenting incomplete work, notices to parents, isolating makeup work. Oh yeah, then teaching."

The cognitive construct that evolved during the student teaching experience and persisted through its conclusion, centered around classroom management and the need to gain and maintain control over students. They no longer believed

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in the absolute strength of the well-developed lesson; they were uncertain about how to control and predict student behavior. They no longer had absolute confidence in their training and skills. The excitement and enthusiasm with which they had once faced teaching were replaced by feelings of fatigue and frustration. And the sense of efficacy with which they had begun the experience was seriously diminished. One subject lamented, "I'm tired. Mentally and physically exhausted. Tired." Another, "Wow! I'm tired - I'm working too hard. I can't seem to get ahead - It's almost like crisis management, one day at a time." Another, " God, this was a long day. Too tired to think, too tired to work, too tired to plan." And yet another, "To be honest, I'll be glad when this experience is over. I thought I'd hate to leave; but for the most part, it's getting harder and harder to get in the car every morning and go to that school."

Exception to the Construct Pattern

The cognitive constructs described above, and their evolution, were descriptive of ten of the eleven subjects. One subject did not "fit" this pattern. The subject was less reflective than the other ten and tended to itemize what had been or would be, rather than to address the cognitions behind these. Nevertheless, the subject appeared

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to think about teaching and the classroom somewhat differently than the others. This student teacher thought about teaching in terms of bonding with the students, a personal relationship, and enjoyment. The subject thought classroom climate, i.e, the feel of the class, was what teaching was about, not lessons, not necessarily learning. The subject retained this construct throughout the student teaching experience, although the subject parroted some of the feelings of the other ten about fatigue and context.

It may be that this subject represents another, distinct and separate pattern of thought. However, one example did not allow for such an identification. Nor did it constitute refutation of the dominant pattern of thought characteristic of the other ten.

Cognitive Construct and Observed Behavior

How the subjects thought about teaching and the classroom, their cognitions, was reflected in the way they behaved in the classroom, i.e., how they taught. Early in the student teaching experience, in consonance with their beginning cognitive construct, their attention to lessons and lesson planning was obvious. The lesson plans they prepared were complex, detailed and well-developed. Lessons were observed to take the entire class period, by design, not accident, and to contain several different activities within each

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class period. No lesson was comprised of only one activity
or used only one method, and all lessons contained
components that required active student participation and
involvement. The lesson might have a mini-lecture, a
discussion, a seat-work activity and a group-work activity,
all in one period. No activity or strategy lasted more than
twenty minutes. And the student teacher included lots of
outside materials that were timely and relevant to the
lesson. In repeated visits (formal and unscheduled) the
lesson organization was different, i.e., the student teacher
did not repeat the lesson organization seen previously.

The subjects' behavior in the classroom reflected their
cognitions about teaching, students and the classroom.
After initial hesitation on the part of three subjects, all
were enthusiastic and energetic in presenting their lessons,
deeply involved in the content and organization, and
demonstrably interested in what they were doing. It was
evident that they were working hard to put over the lesson,
and were intense, rather than casual in manner. Their
verbal and nonverbal behavior communicated pleasure -
pleasure at being where they were and doing what they were
doing, and their manner with students was friendly and open.

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Changes in the subjects' cognitive construct during the
student teaching experience were reflected in changes in
their observed behavior in the classroom. Gradually, the
lesson plans became less detailed, less complex and more
repetitive. Lessons did not necessarily take the entire
period, and were more likely than not to contain only one
activity and an assessment over the course of the period.
The number and variety of activities in the lesson decreased
and the kind of activities included required less active
student involvement than previously. Except for formal
evaluation visits, the organization of more than half of the
lessons was exactly the same from visit to visit. It was as
if the subject had found a format and merely replicated it
when not being formally evaluated.

The lessons contained less information, were less
informative and more superficial. The lessons required less
teacher involvement, and the amount of outside materials
used decreased markedly. The subjects were less careful in
their presentations and did more lessons "off the cuff." At
times, they did no planning, as they noted in their
journals. "I'm not sure what I'll do in class tomorrow -
I'm exhausted and I can't think straight. I'm going to
bed." Another offered, "I've learned to wing it. I can
teach without a plan."

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The subjects appeared less energetic and more tired in the classroom. They were noticeably attentive to the potential for disruption from the students. They seemed to be looking for it to happen and readying themselves to jump on it when it did. Their tone and manner with students was no longer as open and friendly as it once was and there was an edge to their voices as they spoke with many of the students. Frequently, their verbal and nonverbal behavior communicated wariness and responsibility rather than pleasure.

DISCUSSION

The study looked at what and how eleven student teachers thought about teaching and the classroom (their cognitive constructs) as they went through the student teaching experience. The study focused on the student teachers' perspectives (Sarason, 1971; Harootunian, 1980), and took seriously what the student teachers said about themselves (Harre and Secord, 1972; Fenstemacher, 1979).

At the beginning of the experience the student teachers held a cognitive construct of teaching that most nearly approximated Phase 2 of Fuller's Teacher Concerns Model (Fuller, 1969; Fuller and Brown, 1975). They focused on the teaching situation - on the content, on lesson preparation, on learning outcomes, and on their performance of these

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teaching tasks. As they assumed increasing responsibility, and tested this construct against the realities they perceived, they discarded this construct and substituted one that most nearly approximated Phase 1 of Fuller's Teacher Concerns Model. They focused on survival concerns - classroom control and coping with the demands. These constructs guided what they did in the classroom, and the change in constructs was reflected by changes in observed classroom behavior.

The study was exploratory in nature, rather than definitive. It dealt with a small number of subjects, only eleven, and the subjects (post-baccalaureate) were not representative of the majority of current student teachers (pre-baccalaureate). The findings may well be idiosyncratic to the subjects studied. Nevertheless, the findings raised questions and concerns that may go beyond the limits of this study and these subjects.

The "survival" concerns of first year teachers have been amply documented. As teachers face and attempt to deal with the realities and complexities of the classroom, classroom control becomes a dominant concern, "overwhelming" concerns for content and learning (Doyle, 1986); and teachers "change" their behavior in consonance with that concern and the pressures they feel (Veeman, 1984). In the study

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reported above, the student teachers replicated the experience of first year teachers in this respect. If the findings have any applicability for other preservice teachers, they suggest that the process of confronting the realities of schools and classrooms begins, at least for some, during the student teaching experience. If so, are the survival concerns of beginning teachers a continuation of a process already begun preservice? And if so, why don't student teachers work through them during the experience so that they do not have to face them inservice? Is it, as Berliner (1988) has suggested, that there just isn't enough experience in the student teaching experience? Or enough time, as Hollingsworth (1980) suggests? Or do student teachers deny the reality they faced when they begin to teach, i.e., think of those realities as being true of student teaching but not of actual teaching?

The student teachers in this study began with a cognitive construct that focused on teaching and learning outcomes, not classroom control. They were strong and confident in this focus, and for those of us involved in teacher preparation, this focus seems both appropriate and commendable. What accounts for the fact that they discarded this construct so quickly and readily in the face of reality? Is a focus on teaching and learning outcomes somehow inappropriate, or inappropriate as a beginning

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point? The student teachers in the study had had the benefit
of an unusually strong pedagogical preparation program
directed by an expert teacher educator who focused on
teaching and learning outcomes. They modeled these concerns
as they entered student teaching. Did they give them up so
readily because they had not had time to internalize them,
i.e., the time was too short, the practice too little; or
because prior, unexamined preconceptions interfered with
internalization (what preconceptions do students bring to
teacher education programs, and what affect do these have on
what is learned and operationalized?); or because their
preparation did not prepare them to adequately deal with the
realities that appear whether or not a teacher attends to
teaching and learning? By focusing on the "right" things,
might we be presenting an ideal situation that is too far
removed from the realities of the classroom, and therefore
can not stand up to that reality? Might gaining competence
in classroom management, not just learning about it, be a
precondition for the successful application of a focus on
teaching and learning?

Is the beginning cognitive construct lost or merely set
aside? Will the student teachers return to the beginning
construct when they have mastered the realities of schools
and classrooms, hopefully during the first year of teaching,

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or not? Will they modify the beginning one or build an
entirely new one?

The results of the study, and of the many questions it
raises, suggest the value of continuing research on the
cognitive constructs of teachers in various phases of
teaching and from a longitudinal perspective. What
cognitive constructs do prospective teachers bring to
teacher preparation programs? What happens to these
constructs as they go through various phases of the
preparation program, including student teaching? What
constructs do they hold as they begin to teach? As they
continue teaching? And what affect do these constructs, and
possible changes in constructs, have on what the teacher
does in the classroom? A long-term study of a group of
prospective teachers would seem to be an appropriate and
necessary step in gaining a greater understanding of teacher
cognitions.

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