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**Development of Pedagogical Knowledge Related
to Teaching At-Risk Students:
How Do Inservice Teachers and Preservice Teachers Compare?**

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This study examined the development of pedagogical knowledge of preservice and inservice teachers as they implemented newly learned assessment and instructional strategies with at-risk readers in clinical settings. The preservice teachers worked in pairs to tutor children during the regular semester at a university reading clinic; the inservice teachers worked for four days a week for six weeks in a special reading academy. Four stages of development emerged from the examination of the reflective responses of teachers that they wrote after each tutoring sessions with the at-risk readers. The stages identified were: novice, advance beginner, competent, and proficient.

MOST UNDERGRADUATE and graduate programs in reading provide students with opportunities to work with individual children who are at-risk for reading failure. The importance of this type of authentic activity in teacher education is well-documented in literature (Bonar, 1985; Gipe, Duffy & Richards, 1989; McDiarmid, 1990). Other researchers have noted additional benefits of teacher reflection related to these teaching experiences (Bartlett, 1994; Bonar, 1985; Commeyras, Reinking, Heubach & Pugnucco, 1993). Although working with at-risk children does provide for authentic experiences related to teaching, preservice and inservice teachers face unique and challenging instructional questions and dilemma when planning lessons. With this study we hoped to determine how preservice and inservice teachers made instructional decisions for at-risk readers and if the teachers moved through definable stages as they made these decisions.

Stages of learning and development are not new in educational literature. William Perry (1970) described stages of intellectual development that have pertinence to the training of teachers. His work documents that university students generally move from a stage in which they look to the professor as the authority with all the answers to a stage in which they accept that knowledge is contextual. More specifically, Black & Ammon (1992) and Kitchner & King (1990) have documented that as new teachers practice their craft, they move from a passive/recipient stage to an active/participant stage.

In the area of literacy, some recent research has focused on how university students learn about teaching children who are at-risk for reading failure. Walker & Roskos (1994) and Walker & Ramseth (1993) have investigated what types of activities in university courses assisted students who succeeded with at-risk readers. The findings from these studies indicated that preservice teachers benefited from a combination of lecture and actual experience (tutoring) and that this type of activity assisted them in developing a procedural knowledge more specific and free of personal feelings. Kostelnik and Allen (1995) found that preservice teachers successfully proceeded through predictable stages of learning and became more proficient when asked to tutor an at-risk reader and reflect on their practice.

Our study builds on this previous research by seeking to elaborate and expand knowledge related to the development of good teachers of reading at both preservice and inservice levels. By determining how teachers progress toward an understanding of assessing and implementing literacy instruction to address specific student needs, perhaps university instructors can develop more effective scaffolding techniques and can adapt their instruction to better assist in this process. Specifically, the following research questions were posed as guidelines for this study:

- What stages of development do preservice and inservice teachers experience when they work in an inquiry-based instructional model with at-risk readers?
- What is the nature of these stages?
- How do the stages of pedagogical concepts differ between the two groups of teachers?

Research Design and Methods

Participants

Eighteen preservice teachers from one university and eleven inservice teachers from a second university were the participants in this mixed design/descriptive study. The undergraduate preservice teachers were enrolled in a junior level reading assessment course in which they tutored elementary children at a university reading clinic. The class met once a week at the clinic. Students tutored elementary aged children during the first hour of class; the last two hours of class were devoted to debriefing about tutoring sessions and learning new instructional and assessment techniques. The tutors worked in pairs and alternated teaching one week with observation through a one-way mirror the following week. Although the preservice teachers were encouraged to select literature used in the lessons and to develop strategies and activities appropriate for the child with whom they were working, all lesson plans included the following parts:

- new reading of a selected piece of children's literature with assistance from the teacher

- study of specific word or comprehension strategies determined by the needs of the child
- writing
- reading for enjoyment

The eleven inservice teachers were enrolled in a six-hour practicum which is required of those students completing the Special Reading Certification. These students worked in the Summer Reading Academy, which ran four days a week for six weeks during summer school. Each inservice teacher worked with three elementary or middle school children for two and a half hours each day. During part of the session each day all of the inservice teachers and their students worked together in a theme-based big group activity. The professor and inservice teachers met for an hour each day before tutoring began and for half an hour after. During this time they shared problems/solutions and new strategies and coordinated the big group portions of each day's activities.

Data Sources

Data sources for this study included teacher written reflections, lesson plans, and observations by both teachers and university faculty. This allowed for triangulation of the data which "contributes to the trustworthiness of the data" (Glesne, 1999, p. 31).

After each lesson, the participants responded in a one-page reflection paper. We offered three guiding questions to facilitate their writing, but encouraged them to write a narrative about the session and to refrain from simply answering the questions. The guiding questions were:

- What was the most significant thing that happened in your tutoring session today?
- What did you learn from this experience?
- How does this experience inform your instruction?

The professors provided both written and oral feedback to the students regarding their reflections, observations, and instructional decisions. We also collected lesson plans as a means of monitoring the types of

activities planned and to determine if the reflections gave an accurate view of what was happening in the sessions.

Data analysis

Each of us read and coded each set of reflections for types of instructional decisions and reasons for the decisions on a weekly basis for our particular class. Our discussions at the beginning of the study resolved any differences in coding of items from the reflections. At the end of the terms we compared all reflections for each group, preservice and inservice, and patterns of responses and changes in patterns over time. Through discussion and rereading of reflections, we collapsed the categories into four defined stages of development. We compared patterns across the two groups for similarities and differences related to predominant patterns and sequence of development. We compared this information to lesson plans and observational notes of instructional activities to determine if the patterns of responses were indicative of instructional practice.

Description of Stages

We identified four specific stages and their attendant characteristics: 1) novice; 2) advanced beginner; 3) competent; and 4) proficient.

The first stage, **novice**, may be characterized by no risk taking, little instructional planning or evaluation, self-doubt, inappropriate choice of materials and/or activities, broad statements without documentation, and/or little self-reflection or evaluation. A teacher at this stage needed more direct assistance with the selection of materials and the development of activities using these materials. At this stage there was an inability to assess student work and to make instructional decisions based on student responses to a task. The following are examples of comments made by preservice teachers at the novice stage:

- Help!
- I was kind of nervous and I still am because the whole idea of teaching boggles my mind.

- I'm just wondering now what kind of activities I'm going to have to plan to keep him more focused. This is going to be a very big challenge. It's hard for me to see me getting anywhere in the next few weeks.

The teachers at this first stage are clearly more concerned with their own needs than those of their students. Teachers at this stage often wrote comments that indicated they were somewhat overwhelmed by the prospect of actually having to plan and execute lessons.

The characteristics of an **advanced beginner**, the second stage, included taking risks but seeking reassurance from instructor, offering tentative suggestions for activities, designing instructional plans that reflect some basic knowledge of literacy and assessment concepts, beginning to document assessment with specific performance of students, and/or becoming more self-reflective. An advanced beginner would often make statements about what s/he would do, but would follow that directly with a question to the instructor in an effort to determine if the decision was a correct one. Teachers at this stage made comments similar to the following:

- I think I know what I'm doing, but I still need your support and help.
- I'm not sure, but this is what I'll try.
- Bekah sounds out each individual word even if it is a word that she knows by sight. I am trying to think of ways to make her more comfortable reading words that she already knows and this is something I will try and do during our next session.

The teachers at this stage fluctuated between concern for their own needs and those of the students they were instructing. There was some confidence in their abilities, but not much; they realized the magnitude of the responsibility and needed assurances that they could successfully teach the child they were tutoring.

The third stage of pedagogical awareness is the **competent** stage. Teachers at this stage exhibited some or all of the following behaviors: taking risks easily, observing progress of student and relating it to student, planning appropriate lessons based on student needs, and/or

engaging in frequent self-reflection. Students more clearly demonstrated their repertoire of strategies and activities. The reflections these students submitted were more analytical of their lessons and student response to those lessons. The following are examples of comments made by teachers who are at the competent stage:

- We are making a difference and Bekah shows me every week that when you provide children with positive, and well-thought lesson plans the experience proves to be meaningful.
- This is what I decided to do with my student.
- Jody is beginning to respond to the think alouds and I can tell she comprehends better.

Confidence of the teachers is evident at this stage. They make instructional plans decisively and implement them successfully. The teachers are more focused on student response and progress, and they are beginning to measure the success of the lesson by closely observing student actions and responses.

Teachers at the fourth, or **proficient** stage, engaged in the following behaviors: making insightful observations which inform instructional decisions, looking for the deeper causes for student behavior and performance, and/or facilitating mediated learning activities. The teachers who reached this level were very confident in their abilities to assess student needs and to plan instruction accordingly. They often accepted the role of mentor to other teachers. Sample comments from representatives of the proficient stage include:

- If I know what my students can do, I can focus in and use what they know to teach what they don't know.
- I realize that the girls are more involved and excited when they lead and I just guide.

We also tried to determine if teachers moved through the identified stages as they tutored and worked with children. Movement from one stage to a higher stage was evident for both the preservice and inservice teachers in this study. For the preservice group 57 percent (8 students)

were at the novice stage at tutoring session #2, 36 percent (5 students) were advanced beginners, and 7 percent (1 student) were already at the competent stage (See Table 1). By session #5 24 percent (4 students) were still at the novice stage, 41 percent (7 students) at the advanced beginner stage, and more than one third (35 percent or 6 students) at the competent stage. At the end of the semester no student remained at the novice stage, one third (31 percent or 6 students) of the students remained at the advanced beginner stage, and 69 percent (11 students) were at the competent stage.

Table 1. Number of Preservice Teachers at Each Stage of Pedagogical Awareness

Stage	Session 2	Session 5	Session 9
Novice	8	4	0
Advanced Beginner	5	7	6
Competent	1	6	11
Proficient	0	0	0

At the beginning of the summer session, nine percent (1 teacher) of the inservice teachers were at the advanced beginner stage, 64 percent (7 teachers) were at the competent stage and 27 percent (3 teachers) were at the proficient stage (See Table 2). By session #5 nine percent (1 teacher) of the inservice teachers were still at the advanced beginner stage, 55 percent (6 teachers) were at the competent stage, and 36 percent (4 teachers) were at the proficient stage. Analysis of the session nine responses showed 55 percent (6 teachers) of the students were at the competent stage and 44 percent (5 teachers) were at the proficient stage. The responses following session 13 indicated that nine percent (1 teacher) were still at the advanced beginner stage, while 36 percent (4 teachers) were at the competent stage, and 55 percent (6 teachers) were at the proficient stage. Session 17 was the final tutoring session and analysis of the responses showed 11 percent (1 teacher) was at the advanced beginner stage, 44 percent (4 teachers) were at the competent stage, and 45 percent (4 teachers) were at the proficient stage.

Table 2. Number of Inservice Teachers at Each Stage of Pedagogical Awareness

Stage	Session 1	Session 5	Session 9	Session 13	Session 17
Novice	0	0	0	0	0
Advanced Beginner	1	1	0	1	1
Competent	7	6	6	4	4
Proficient	3	4	5	6	4

All preservice teachers began at the novice stage, although their time at that level varied across the group. None of these students advanced beyond the competent level. One inservice teacher began at the advanced beginner stage and made no progress during the term. Seven inservice teachers began at the competent stage, and four at the proficient stage. This knowledge and understanding of how the teachers moved along the continuum to improved decision-making allowed the professors to provide appropriate instruction and scaffolding for their learning.

While not all teachers (preservice and inservice) experienced all stages, at least one teacher represented every stage with the exception of the novice stage in the inservice group. One inservice teacher began at the proficient stage and stayed at this level for the entire session. This may be indicative of a fifth level of teaching performance, however, with only one example we could not say with confidence that another stage existed or describe the stage with any level of credibility. With a longer study or a second study a fifth stage might emerge.

Discussion

In this study, we wished to examine whether providing authentic and mediated teaching experiences allowed preservice and inservice teachers to improve their instructional decision-making skills, especially with at-risk readers. This study indicates that this type of mediated instruction results in progress from one stage of pedagogical awareness to another and is as important for inservice teachers as preservice teachers. These findings support the work of Perry (1970), Black and Ammon (1992), and Kitchner and King (1990) who documented that

students become more proficient as they gain new knowledge and have new experiences. Smith and Hill (1999) indicated that the tutors in their study moved from a teacher-centered stance to one more focused on the student. That clearly occurred in this study as the teachers moved from the novice stage to the competent stage. The direct work with children in this study with input and mediation from the professors and classmates also assisted the students in developing higher levels of pedagogical and procedural knowledge (Walker & Ramseth, 1993; Walker & Roskos, 1994; Allen & Kostelnik, 1995).

Movement through the first three levels (novice, advanced beginner and competent) appeared to occur as almost a natural progression for most teachers in this study. Understanding this allowed university professors to improve their own instruction. For example, we have used this information to better prepare students to anticipate and respond to concerns and issues as they occur in their teaching. During direct observations of both preservice and inservice teachers faculty have a better sense of how specifically to assist them in relation to their stage of pedagogical knowledge. Sometimes students struggle but continue to make progress; faculty now have a way to gauge whether a teacher would benefit from direct intervention or from continuing to work through a problem. However, advancement from competent through the proficient pedagogical stage is more difficult to predict and leads one to question how teacher educators can best impact the development of necessary thinking skills to advance through these levels. Additional research of the higher levels of pedagogical thinking are needed to provide us with enough information to become effective instructors for these teachers. Finally, it should also be noted that movement from one stage to another does not occur in only one direction. Although these preservice and inservice teachers generally moved to advanced stages, there were instances in which they moved to a lower stage. This should serve as a caution to professors that pedagogical knowledge develops over a period of time and that they should view a student's progress over time as well as lesson by lesson.

This study adds to earlier research about teacher pedagogical knowledge and growth. However, much research is still needed to inform the way university faculty guide teachers, particularly those that work

with our most needy students. Future research should focus on the nature of these stages and what strategies teacher educators might implement to support teachers, as they become masters of their craft in the classroom.

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