

The Spectrum and Teacher Education

Pedagogical accountability—preparing teachers who can teach effectively—appears to be the major theme on which many of the problems in education hinge. This article describes the design, process, and results of one Spectrum-based pedagogical program that has made a difference in preparing and developing teachers.

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Pedagogical accountability—preparing teachers who can teach effectively—appears to be the major theme on which many of the problems in education hinge. How can we accomplish this task? This article describes the design, process, and results of one pedagogical program, based on *The Spectrum of Teaching Styles*, that has made a difference in preparing and developing teachers.

We have all heard criticisms about teacher preparation. John Silber, the president of Boston University, once said, “The best thing that could happen to most schools of education would be closing them” (1990). Some students report that their college training programs did not teach them how to teach. They say they taught themselves how to teach once they became teachers.

In spite of these criticisms, the search for teacher education programs that will positively affect the system continues. Most teacher educators agree that the knowledge, behavior, skills, and talents of an individual teacher affect the level of proficiency and efficiency within the classroom. In other words, teachers

do make a difference. Teacher educators continuously strive to restructure, streamline, and adjust teacher preparation programs so that future teachers are prepared with adequate knowledge and classroom skills to educate children in the twenty-first century.

Center on Teaching

In 1972, the Center on Teaching, directed by Muska Mosston and myself, provided the conditions for eight years of direct implementation of the Spectrum into a variety of classroom settings (Title IV-C grant from the New Jersey State Department of Education). The Center, available to all public schools in New Jersey, was charged with expanding the repertoire of teaching techniques employed in the classroom.

We worked in schools with teachers from all levels: kindergarten, elementary, middle, high school and college classes, gifted and remedial classes. We worked with teachers from many disciplines, including health and physical education. We traveled to a variety of teaching situations, including inner city to suburban, neglected to well-equipped,

structured to unstructured, efficient to inefficient, and high ranked to low ranked. Volunteer participation ranged from two teachers in one school to 100 teachers in a large high school. Hundreds of teachers and supervisors participated in workshops the Center provided during its eight-year program.

The Center on Teaching had many opportunities to address the issue of theory as it relates to practice. Educational literature frequently reports that the “gap between theory and practice stubbornly remains” (Carr, 1990, p. 100). Designing a training program that would correspond to the theory underlying the Spectrum became the Center staff’s primary focus. During the eight-year period of implementation, 90 percent of the staff’s time was spent in classrooms grappling with the procedures for a smooth transition from theory to practice. Teachers from these various settings helped to refine the Spectrum structure. Their contributions fell into three categories: those who experienced success verifying what the theory predicted; those who discovered new insights helping

to expand the Spectrum; or those who raised questions that could not be answered with satisfaction.

The constant analysis of teachers' interpretations of the theory refined both its details and its practical application. Today, Spectrum theory and the procedures for its implementation represent the cumulative efforts of all of those participating teachers.

Modifications made in the Spectrum based on interactions with the teachers helped move it from a theoretical paradigm to a workable teaching model that could be practiced in classrooms. Because of the continuous and intensive classroom implementation schedule, a strong fidelity developed between the Spectrum theory and its implementation by teachers. The premises on which the Spectrum stood could finally be translated into behavior independent of its designers. The teachers' ability to replicate the theory with fidelity gave life to the Spectrum beyond just the theoretical.

This relationship between theory and practice appears to be a major factor that differentiates the Spectrum from many of the other theoretical notions in education (Ashworth, 1983, 1991). The cycle from theory to practice and practice to theory resulted in a system about teaching that withstood the crucible of reality.

Procedures for Teacher Development

The Center used the following steps in Spectrum (Mosston & Ashworth, 1979):

1. Introduction to the Spectrum and training procedures
2. Preworkshop classroom visits
3. Workshop, Part I: The Theory
4. Workshop, Part II: Micro-teaching
5. Classroom follow-up visits

Step one: Introduction to the program. Based on their interest, teachers volunteered to participate and study.

We learned early that teachers cannot be forced to study. Teachers need to be informed about the program's content and procedures before making an informed decision to become involved.

Step two: Preworkshop classroom visits. All teachers who volunteered were visited in their classroom before training began. This helped us to accomplish the following:

- Establish a one-on-one relationship with each teacher before training.
- Gain insights concerning teach-

The Spectrum is a decision-making model. Each style is based on a specific decision distribution between the teacher and the learner so that a specific set of objectives can be developed and accomplished. Each style has its own unique decision structure. For example, in the Command style, Style A, the teacher makes all decisions; the learner's role is to respond to precise cues of the teacher. The unique objectives of Style A are precision, uniformity, accuracy of performance, esprit de corps, transmission of traditions,



Students learning the hockey grip via the Command style.

ing skills and preferences of each teacher.

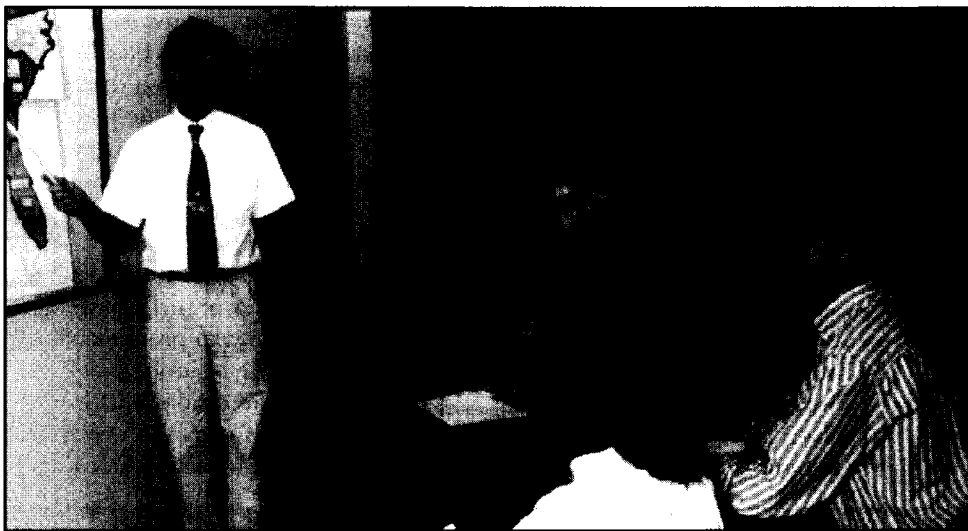
- Observe a portion of the teacher's realities (students, class size, subject matter, work conditions, support systems, etc.).
- Decide which teaching styles to cover in what order.
- Determine potential problems or issues.

Although teachers were apprehensive about this process, it was invaluable. We established a personal relationship and gathered information about each teacher's teaching skills, information used to address the needs, concerns, issues, and problems that were relevant to the teachers.

Step three: Workshop Part I: The Theory. The following is representative of the information delivered during theory:

and safety. Examples of activities relating to this decision relationship are folk dancing, aerobics, karate, formal ceremonies, cheerleading, choral and orchestra performances, synchronized swimming, and marching bands—responding on cue at the precise moment is crucial in each of these.

Step four: Workshop Part 2: Micro-teaching (demonstration of behavioral competence in the teaching styles). Micro-teaching in the Spectrum program is closely connected to the theory of each style. The goal for teachers was to demonstrate they could replicate the anticipated teaching style. To facilitate this learning process, analysis tools for each style were designed (Ashworth, 1974). These tools delineated in each style the order of the decisions



During micro-teaching, videotaped episodes are used as analysis tools. Teachers can view the tapes to determine whether the structure and order of a certain style was followed.

that must be made and who must make them. These tools helped teachers translate the theory into a practical guide to help them execute the anticipated teaching style. During micro-teaching, the analysis tools serve as:

- a condensed reminder of the theory.
- an outline for material preparation. In small groups each teacher prepared a three- to seven-minute teaching episode incorporating all the theory of the specific style.
- a reference for the actual videotaped episode with children.
- a self-check tool. In groups, each teacher viewed and engaged in a group analysis of the teaching episodes. Teachers recorded each analysis tool that was used to determine whether the structure and order of that style was followed. Developing analysis skills by criteria was a major objective of this activity.
- a Spectrum trainer feedback tool. A trained Spectrum observer viewed each tape with each group to verify the teachers' skills in "learning to see and hear." Helping teachers develop analytical skills by criteria was the main objective here.
- a retaping tool. If the executed teaching episode was congruent with the structure of the specific

teaching style, the leader and teachers would begin preparing for the next teaching style, using that style's analysis tool. If errors and incongruence between the style structure and the executed behavior occurred, teachers were asked to retape the episode, focusing on correcting their errors. These procedures were repeated as each style was videotaped.

Micro-teaching is an emotional experience. Typically, when students or teachers are asked to "teach" in front of a camera and then justify or explain their behavior, an idiosyncratic analysis generally occurs. Teachers tend to defend their actions instead of analyzing the process according to anticipated outcomes. Since each Spectrum style has its own decision structure and anticipated set of responses, teachers have less opportunity, because of the analysis tools, to indiscriminately justify their micro-teaching episodes. The analysis tools help to maintain the theoretical integrity of each teaching style. Initially, teachers must focus on internalizing the intrinsic decision structure of each style.

Step five: Classroom follow-up visits. The primary focus of this step was to provide teachers with a supportive transition between theory and practice. After the workshop training the Center's staff provided individual

support to each teacher as they began to implement the various teaching styles in their classroom. Frequent visits to each teacher's classroom were made so that individual and immediate feedback could be offered. These visits enhanced success and reduced the initial "uncertainty" of implementing new teaching styles. In some schools a visitation schedule continued for the entire year.

Teaching must be based on more than the idiosyncratic views and preferences of individual teachers. There must be a common discipline, a common set of un-

derstandings, that serves as a professional foundation. Teachers' individual personality characteristics need not disrupt the decision-making structure of specific styles. The structure of teaching models is independent of personal preference. For example, the overhand volleyball serve has its own specific structure; one's "personality" is independent of the mechanics of the serve.

If expanding the range of various teaching behaviors is a goal for future teachers, they must be required to go beyond their previous experiences and images of the teacher-learner relationship. The more secure teachers become in the structure of a theory, the more spontaneous they can become.

Teacher Education

Several colleges and universities currently use the Spectrum and similar teaching models in their teacher preparation programs. Florida Atlantic University uses the Spectrum in an optional undergraduate teacher training program. This two-semester program requires three hours of lecture and six hours of public school involvement a week. The first semester of the program focuses on Styles A through D, the second semester on Styles E through K. Training steps three through five are used in this program. After presentation of the style's theory, stu-

dents are required to design a micro-teaching experience (from three to seven minutes) and practice these experiences with three other peers. After students analyze their videotaped teaching episodes, the instructor views the tapes. This analysis focuses on congruence of actual teaching to the style's decision structure. Students practice the same style for a second micro-teaching episode with four children from their public school field experience class. This procedure is repeated for each style.

Students in this program learn that the decision structures and the anticipated set of objectives differentiates one teaching style from another. They realize that each teaching style represents a different kind of learning experience. (See Goldberger's article for a review of research indicating a difference in

1 includes theories and concepts that promote awareness and understanding of self and others. Professors design teaching/learning experiences in various teaching styles to help students gain insights about feelings, thoughts, beliefs, values, sociocultural factors, and verbal/non-verbal communications. Through the process of disclosing and sharing, students determine how these and related factors influence a person's role as a teacher. Pedagogical Block 2 focuses on systematic observation and data collection on teaching and learning sessions in schools. Students analyze the data and draw conclusions based on criteria that indicate the effectiveness of teaching. Students also write a paper relating their data analysis to pedagogy theory. Pedagogical Block 3 focuses on prescriptive models of teaching. Students

Pedagogical Block 4, student teachers plan and activate teaching/learning episodes using designated teaching styles and compatible prescriptive instructional structures/skills. They must master the skills of planning a variety of episodes and selecting appropriate teaching/learning structures that are more likely to attain the episode's process/product goals.

In Temple University's Physical and Health Education Teacher Education (PHETE) Program, the Spectrum is introduced informally in the first year. Before learning about Spectrum theory, students are taught physical education activities in courses where the instructors systematically use the Spectrum. In addition, in the first year, they micro-teach in local elementary schools where they use specific teaching behaviors that will be expanded into teaching styles. During the second year of the program, students learn about Spectrum theory. The "reproductive" styles are the focus for the first semester, while the "productive" styles provide the focus for the second semester. During this entire year, students spend three periods each week in local schools teaching, using the Spectrum, under the supervision of Spectrum-trained teachers. Finally, during their third year, they student-teach, in most cases with Spectrum-trained teachers.

Teacher training programs can make a difference. The gap between

theory and practice can be reduced. University teacher training programs are an indispensable link in teacher preparation. What makes the difference is the teaching theory that is presented to students. For example, student teachers who have studied the Spectrum implement more of the effective teaching skills delineated by the literature than stu-

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The author, at right, debriefing a micro-teaching session. Micro-teaching in the Spectrum program is closely connected to the theory of each style.

the classrooms of the Spectrum-trained students as compared to the classrooms of students who were not trained in the Spectrum.)

The Pedagogical Block, developed by Rudy and Sue Mueller at East Stroudsburg University, consists of four semesters of experiences to help physical education-teacher education majors make the transition from student to a conscious and deliberate teacher. Pedagogical Block

demonstrate on videotape various teaching structures, including the ability to do teaching styles A through H, and show competency in the compatible teaching strategies and skills. Both the professor and students analyze the tapes for congruency and effectiveness. Students also demonstrate a comprehensive lesson plan, analyze strengths and limitations, and identify issues/implications for each teaching style. In

can choose compatible pedagogical strategies to organize learners and materials and compatible teaching skills to behaviorally implement the plans that will help attain the desired goals.

Mosston's *Spectrum of Teaching Styles* has made a monumental contribution to pedagogy and the concept of conscious and deliberate teaching. No other structure has provided an organized framework in which to place all the "right ways" to teach so teachers can consciously and deliberately make accurate choices in matching instructional structures with process/product goals to facilitate student learning.

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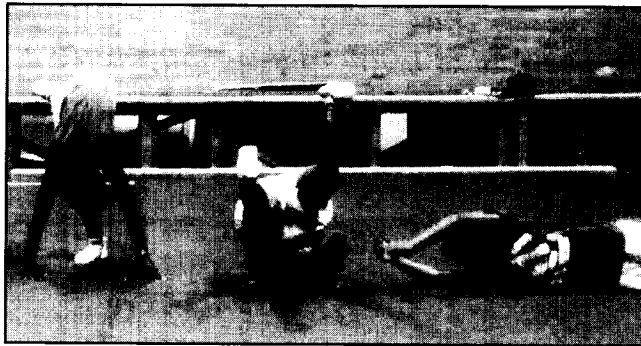
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dent teachers who have not studied the Spectrum (Ashworth, 1988, 1989, 1990, 1991).

Discussion approaches, observational, or interpretative teacher training programs will not suffice as we approach the twenty-first century. A trend in education today is to create alternative teaching programs. Recently, in a school district in Florida, one such program was proposed: re-

Rudy Mueller was part of the Spectrum's original design, development, dissemination, and integration into school programs. Suzanne Mueller became Rudy and Muska's colleague in 1970 when they came to East Stroudsburg (PA) University.



Students can experience the Divergent Production style (Style H) during lessons such as a rolling exercise. Here students learn to produce multiple responses to a single question (e.g., How many ways are there to roll?).

cruit high school graduates and offer a long-term, on-site training program that culminates with a teaching position (Work, 1991). Such programs threaten existing colleges of education, who must regain their indispensable position in the teacher training process. A commitment to pedagogical accountability provides students with the specific action components needed to prepare them to enter the teaching profession. Our students must graduate with competent teaching skills—skills that make a difference in the classroom. These teachers need a repertoire of knowledge, perhaps a Spectrum of Teaching Styles.

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