

A Coherent PETE Program: Spectrum Style

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Teacher education has been a source of considerable concern and debate since the quality of teaching within our nation's schools came under fire some 15 years ago. Many within the subsequent reform movement have wondered who prepares our teachers, in what manner, and how well, and have directed such questions at teacher-preparation programs (Holmes Group, 1986, 1990, 1995). To better understand "the education of our nation's teachers" (p. 6), Howey and Zimpher (1989) conducted a comprehensive study of six exemplary elementary teacher preparation programs. Their research highlighted 14 program attributes that contribute to coherent preservice teacher education. According to them, coherent teacher-preparation programs:

- are driven by clear conceptions of teaching that foster shared beliefs;
- have distinctive qualities that help faculty fuse with one another;
- have major goals that are both reasonable and clear;
- challenge students academically;
- tie concepts together across the curriculum;
- have a balanced relationship between general knowledge, pedagogical knowledge, and the experiences that promote the use of this knowledge;
- have students proceed through the program in groups;
- have specific challenging benchmarks that are to be met at different points within the program;
- allow for an integrative approach to curriculum;
- give students the time needed to assimilate significant content;

- have the materials, instructional resources, and technologies for delivering well-conceived laboratory experiences;

- closely connect university activities with those occurring in the public schools;

- involve research and development in both teacher education and teaching; and

- include plans for systematic program evaluation (pp. 246-254).

These 14 attributes parallel those found in the "school effectiveness" literature (Purkey & Smith, 1982).

Teacher-preparation programs have also been targeted as significant contributors to the lack of high-quality physical education programs in K-12 schools (Griffey, 1987; Locke, 1992; Siedentop, 1987). Siedentop and Locke (1997) described this as a systemic failure, "one that involves the relationship of physical education in public schools with teacher preparation in higher education" (p. 26). They proposed a set of minimum conditions for designing successful physical education teacher education (PETE) programs. First, the program must have a focus and faculty who accept this focus. Second, the program must require enough time or credits to ensure that students learn the content well enough to experience success as novice teachers. Third, preservice teachers must be placed at school sites where partnerships have been forged between university faculty and school teachers through collaborative activities. These placements must be directly controlled by the faculty and teachers. Fourth, the program must allow for "selective admission and retention

of students" (p. 13). Fifth, adequate resources (people, materials, and space) must be available to program faculty and support staff to ensure a positive learning environment for the students. Sixth, faculty must be rewarded for the roles they play in the program and the type of scholarship they perform. Seventh, collaborative research by program faculty and other university faculty must be encouraged. Finally, the program must achieve NCATE accreditation. Noticeable overlap exists between the conditions identified in Howey and Zimpher's (1989) research and the conditions proposed by Siedentop and Locke.

The purpose of this article is to describe a PETE program that has been designed to include many of the above attributes. The framework used to help students in this program understand teaching and learning is Mosston and Ashworth's (1994) *Spectrum of Teaching Styles*. To enable these students to experience success with the Spectrum, Joyce, Showers, and Weil's (1992) conditions for learning a new teaching repertoire have also been used.

The Spectrum

It has been 34 years since Muska Mosston introduced the Spectrum of Teaching Styles in his book *Teaching Physical Education* (1966). Many educators from around the world have embraced the Spectrum as a framework for delivering instruction in schools (Gerney & Dort, 1992; Greenspan, 1992; Mellor, 1992), designing undergraduate teacher-preparation programs (Ashworth, 1992; Mueller & Smith, 1999), and

conducting research (Byra & Jenkins, 1998; Goldberger & Gerney, 1986, 1990; Telama, 1992). In marking the silver anniversary of the Spectrum, the *Journal of Physical Education, Recreation & Dance* (Franks, 1992) published a feature outlining the influence that the Spectrum has had on physical educators, teacher educators, and researchers in the field.

Nowadays, the Spectrum is widely incorporated within PETE programs, though the degree to which it is employed as a framework for understanding teaching and learning varies from one program to another. In many programs, Spectrum teaching styles are merely touched upon in introductory teaching methods courses as a means of presenting lesson content. In other programs, Spectrum theory is woven into two or three professional-preparation courses and opportunities for practice are provided. In a few programs, the Spectrum serves as the primary framework for organizing and delivering pedagogical knowledge.

A planned sequence of educational experiences that combines theory, appropriate models, practice (in both protected conditions and real-world settings), and feedback is necessary if preservice teachers are to experience success in using the Spectrum (Joyce et al., 1992). Knowing the principles and rationale associated with a new teaching style helps one better understand when and how to use it. Observing expert demonstrations of a new teaching style helps one visualize how the style should unfold in the classroom. Practicing under protected conditions with feedback (e.g., with peers, with one child, or with small groups of children who are relatively easy to teach) allows one to get a "feel" for a new style, while practicing under real-world conditions in the presence of a peer coach (i.e., a fellow teacher who is also new to the teaching style) enables one to work new instructional methods into one's teaching repertoire.

In the remainder of this article, I will describe how the Spectrum is woven into the various movement (activity), professional-preparation, and

field-experience courses of the University of Wyoming's four-year PETE program. Specific information about each course in this program is presented in table 1. The manner in which the Spectrum is incorporated in the program reflects the elements that Joyce et al. (1992) postulate as essential for the successful implementation of a newly acquired style of teaching.

First Exposure: Participant

The students' first exposure to the Spectrum is as participants in one of the four core movement courses that they must complete during their first two years in the program. These courses are based on the skill-theme and movement-concepts approach (Graham, Holt/Hale, & Parker, 1998). The movement class in which the Spectrum is central is titled "Striking and Volleying." In this course, students learn about Mosston and Ashworth's (1994) teaching styles through active participation in Spectrum episodes. One or two Spectrum episodes selected from the reproductive (styles A through E) and productive (styles F through H) clusters are presented during each lesson by instructors who are trained in the Spectrum. Joyce et al. (1992) suggest that experiencing the role of the learner is an important initial step in gaining comfort with and successfully implementing a new teaching method.

One-On-One Teaching

After exposure to the Spectrum as participants, the preservice teachers learn more about the Spectrum teaching styles through theory, demonstration, and practice. Four Spectrum styles in particular are highlighted: practice (style B), guided discovery (style F), convergent discovery (style G), and divergent production (style H). These teaching styles are presented to the students in the first course they take (Teaching Lab I) after having been admitted to the final two years of the PETE program.

Teaching Lab I combines instructional theory with opportunity to practice. The course is designed to help

the preservice teachers acquire the knowledge and develop the skills necessary to provide young children with developmentally appropriate movement experiences. During the first half of the course, the preservice teachers are introduced to the four aforementioned styles through lecture, discussion, demonstration, and peer practice. During the second half of the course, they incorporate these styles in the lessons that they are required to teach to young children. Each preservice teacher instructs one four- or five-year-old child in skill themes, movement concepts, and physical fitness, employing at least two of the four main teaching styles in each session. Because the focus of Teaching Lab I is on learner exploration, the divergent production style is employed more frequently than the other three styles. Teaching styles from the reproductive and productive clusters are introduced at this early stage to help the preservice teachers better understand their students' capacity to discover movement concepts and replicate skill models. Practice-teaching is conducted under highly protected conditions in this course.

Small-Group Teaching

The next two courses in the Spectrum sequence are "Teaching Methods in Physical Education" and "Teaching Lab II." Concurrent enrollment in these two courses is required of the students. The premises underlying the Spectrum are presented to the students via lecture, discussion, and observation in the methods course, along with opportunities to practice each style with fellow classmates.

Once the preservice teachers have gained a minimal level of competence and comfort in a given teaching style, they incorporate that style in their lessons during their daily instruction of elementary and middle school students in Teaching Lab II. Two K-8 parochial schools serve as the sites for Teaching Lab II. Each preservice teacher delivers four three-week instructional units to different grade groups (composed of 10 to 15

students each) during this semester-long field experience.

The teachers are required to include at least one Spectrum episode in each lesson taught during Teaching Lab II. By the end of the course, they will have practiced each teaching style (A-H) three or more times under the observation of a university supervisor and peer coach. Most of the preservice teachers demonstrate greater comfort with one or two specific styles by the end of the course because they have attempted these styles more times than the others. In some cases they have attempted one or two styles a dozen times each. This is not unreasonable, since Joyce et al. (1992) reported that teachers will continue to feel a certain level of discomfort with a new teaching strategy until they have tried it 10 or more times.

One criticism leveled against teacher educators is their lack of involvement in teaching schoolchildren. The instructors in charge of Teaching Lab II are assigned to teach a three-week Spectrum-based unit to elementary or middle school students each spring. While the faculty teach, the

preservice teachers serve as coaches. This role reversal has had a significant positive impact on both the preservice teachers and their instructors.

Teaching in Public Schools

During their senior year, the preservice teachers are enrolled in two courses that have Spectrum instruction at their core: "Teaching Lab III" and "Curriculum Development." In the former, the preservice teachers practice teaching in real-world settings in the presence of a peer coach. They teach daily physical education to full classes of elementary and secondary public school students. Assigned to cooperating teachers in pairs, the preservice teachers complete four weeks of teaching at both the elementary and secondary levels. Each day they are responsible for teaching one lesson and for watching their partners teach one lesson. While their partners teach, non-teaching partners take the role of peer coaches. By the end of Teaching Lab III, the preservice teachers will have practiced each teaching style two or more times at both the elementary and secondary levels under the observation of a peer coach.

The peer coach is the key to success in Teaching Lab III: peer coaches provide companionship and help their partners analyze both their application of Spectrum styles and their expectations concerning student learning (Joyce et al., 1992). Companionship provides reassurance that any problems encountered while teaching are normal and shared. In analyzing the application of a given teaching style, the peer coach can help determine the appropriateness of this style given the teacher's pedagogical objectives. Furthermore, each teaching style has a matching set of expectations for students. Whenever a new teaching style is introduced, students must become acquainted with what is expected of them. In fulfilling these three functions, the peer coach facilitates the preservice teacher's transition between practicing in protected settings and practicing in the workplace. The quality of the peer-coaching relationship will also affect the teacher's perceived competence in incorporating new teaching styles in his or her teaching repertoire.

In the Curriculum Development class, the students are required to

Table 1. Courses in a Spectrum-Based PETE Program

<i>Course Title and Credits</i>	<i>When Course Is Completed</i>	<i>Class Meetings Per Week</i>	<i>Hours of Contact Per Week</i>	<i>Faculty Assigned</i>
Movement Core: Striking and Volleying (2 credits)	Sophomore year, Spring semester	Daily	5	1
Teaching Lab I (2 credits)	Junior year, Fall semester	2	4	2
Teaching Lab II (3 credits)	Junior year, Spring semester	3	6	2
Methods of Teaching (3 credits)	Junior year, Spring semester	3	3	1
Teaching Lab III (4 credits)	Senior year, Fall semester	Daily	10	2
Curriculum Development (2 credits)	Senior year, Fall semester	2	2	1
Student-Teaching Experience (16 credits)	Senior year, Spring semester	Daily	40	5

reflect on their teaching experiences in Teaching Lab III. Class discussions center on their successes and failures as they relate to general education and to Spectrum-specific issues. The students also learn about the relationships between the reproductive and productive teaching styles and the different curriculum models (e.g., reproductive teaching styles are preferable to productive teaching styles in curriculum models that emphasize specific knowledge or motor skills).

Student Teaching

The capstone course of the PETE program is the student-teaching experience. During their 16-week student-teaching experience, the preservice teachers are given the opportunity to apply theories and concepts learned in the undergraduate program. The student-teaching experience is evenly split between the elementary (K-6) and secondary (7-12) levels. The student teachers are expected to continue to incorporate a variety of teaching styles in their lessons during the student-teaching experience. However, this expectation is tempered by the fact that student teachers are frequently placed with cooperating teachers who know little about the Spectrum teaching styles. Expecting students to extend their working knowledge of the Spectrum under such circumstances is unrealistic. However, they are expected to maintain their knowledge of the Spectrum via regular use of it in their own teaching.

This dearth of Spectrum-literate cooperating teachers is problematic. This issue is presently being addressed by the PETE faculty in the following manner. A course titled "Models of Teaching" has been developed for cooperating teachers. This course is delivered via videotape and teleconference. Teachers who are enrolled in this course learn about each of the Spectrum styles through lecture (videotape), observation of demonstrations (videotape), class readings (text), and class discussion (teleconferencing). Each week, the enrollees plan, implement, and assess at least three

episodes of the presented teaching style in their own school settings. In the succeeding class, they are given time to ask questions and share successes by telephone.

A Coherent Teacher-Preparation Program

Numerous components of coherent teacher-preparation programs, as described by Howey and Zimpher (1989) and Siedentop and Locke (1997), are embedded in the PETE program at the University of Wyoming. First, the program has a unifying framework, the Spectrum, around which seven of its courses revolve over a three-year period. Unlike other frameworks for understanding the relationships between teachers and students, the Spectrum has been designed specifically for instruction in physical education. It represents a "common language" for all of those involved in the preparation of physical educators at the University of Wyoming. Furthermore, the program involves an appropriate combination of lecture, discussion, observation, practice, and feedback in both protected and real-world settings.

Five faculty members share responsibility for the seven Spectrum-based courses. All five understand the Spectrum and the role it plays in the preservice teachers' understanding of teaching and learning. The faculty use the Spectrum as the framework for the curriculum because they share a common belief about the value of having a focal point for their PETE program.

The schoolteachers with whom the preservice teachers are placed for practical experience are well versed in the PETE program and the Spectrum. Program faculty view these teachers as equal partners in the development of future physical educators. Although we have made strides in developing the relationship between the university program and the schools, there is still much room for improvement, particularly in the culminating student-teaching experience.

After the students complete their first two years in the PETE program,

they must apply for entry into the final two years of the program. Approximately 20 students are selected for entry each year. These preservice teachers complete all of their junior- and senior-level Spectrum-based PETE courses together. They function as a group during this two-year period; this allows for the development of close student and faculty relationships.

Summary

The PETE program at the University of Wyoming is a carefully constructed series of courses that reflects the characteristics of coherent teacher-preparation programs. The major elements of the program are now in place, but faculty must still refine these individual elements in order to develop more effective beginning teachers. The value of any program must be substantiated through research, of course, and we are now in a position to analyze the effectiveness of the program. Over the next five years, we plan to research the impact of this undergraduate program by addressing questions such as: (1) what effect does this program have on the cognitive and instructional behaviors of its graduates; (2) do the program graduates employ Spectrum teaching styles in their instructional routines; and (3) what are the long-term effects of this educational program on the graduates' use of the Spectrum styles?

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have the ability; now we just need to apply it" (p. 46). This wellness unit represents a step toward application.

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