

Byra, M. (2000). A coherent PETE program: Spectrum style. *Journal of Physical Education, Recreation, and Dance*, 71(9), 40-43, 56.

A Coherent PETE Program: Spectrum Style

Teacher education has been the source of considerable concern and subsequent debate since our nation's schools and the quality of teaching within them came under fire some 15 years ago. The quality of teacher preparation programs has been at the root of the current debate about needed reform in teacher education. Questions related to teacher education that have emerged from this reform movement include who prepares our teachers, in what manner, and how well (Holmes Group, 1986; 1990; 1996).

To better understand "the education of our nation's teachers" (p. 6), Howey and Zimpher (1989) conducted a comprehensive study of six distinctive/exemplary elementary teacher preparation programs. A total of 14 program attributes that contribute to coherent preservice teacher education programs emerged from their research. According to Howey and Zimpher, coherent programs of teacher preparation:

1. are driven by clear conceptions of schooling/teaching that contribute to shared beliefs;
2. have distinctive qualities around which faculty fuse;
3. have major goals that are both reasonable and clear;
4. challenge the student's academic ability;
5. have themes that tie concepts together across the curriculum;
6. have a balance and relationship between general knowledge and pedagogical knowledge, and the experiences that promote the use of this knowledge;
7. have students proceed through the program as cohort groups;
8. have certain challenging benchmarks or milestones that are met at different points within the program;
9. allow for an integrative approach to curriculum;
10. allow students the time needed to assimilate significant learnings;
11. have the materials, instructional resources, and technologies for delivering well-conceived laboratory experiences;
12. closely connect the campus activities with those occurring in schools;
13. involve research and development in teacher education and teaching; and
14. include plans for systematic program evaluation. (pp. 246-254)

The 14 attributes identified by Howey and Zimpher parallel those found in the "school effectiveness" literature (Purkey & Smith, 1983).

In the area of physical education, teacher preparation programs have been targeted as significant contributors to the lack of quality physical education programs in K-12 schools (Griffey, 1987; Locke, 1992; Siedentop, 1987; Siedentop & Locke, 1997). Siedentop and Locke (1997) describe this as a systemic failure, "one that involves the relationship of physical education in public schools with teacher preparation in higher education" (p. 26). In redesigning physical education teacher education (PETE) programs for systemic success, Siedentop and Locke propose a set of minimum conditions. First, the program must have a focus, and faculty who accept the focus. Second, enough time or credits must be associated with the program to ensure that participants know 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 the university faculty and school teachers through collaborative efforts. These placements must be directly controlled by the faculty and teachers involved in the program. Fourth, the program must allow for "selective admission and retention of students" (p. 13). Fifth, adequate resources (human, materials, and space) must be available to program faculty and support staff to ensure a positive learning environment for the students enrolled in the program. Sixth, faculty must be rewarded for the roles they play in the program and the type of scholarship they perform. Seventh, research efforts must be encouraged between faculty within the program unit and faculty across the university. 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 (1997).

The purpose of this article is to describe a PETE program that has been purposefully designed to include numerous attributes associated with coherent preservice teacher education programs (Howey & Zimpher, 1989; Siedentop & Locke, 1997). The framework (focus) chosen to understand the teaching-learning process in this program is Mosston and Ashworth's (1994) Spectrum of Teaching Styles. To enable the preservice teachers to experience success with the Spectrum of teaching styles, Joyce, Showers, and Weil's (1992) conditions for learning a new teaching repertoire are used.

It has been 33 years since Muska Mosston introduced the Spectrum of Teaching Styles in his book, *Teaching Physical Education* (1966). Many in the field of physical education and education alike from around the world have embraced the Spectrum of Teaching Styles 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, and Dance* (Franks, 1992) featured a collection of articles to reflect the importance the Spectrum has had on physical educators, teacher educators, and researchers in the arena of physical education.

Mosston and Ashworth's Spectrum of teaching styles (1994) is widely incorporated within physical education teacher education (PETE) programs. However, the degree to which the Spectrum is employed as a framework for understanding the teaching-learning process varies from one program to another. In many programs Spectrum teaching styles are simply introduced in a single teaching methods course, introduced as a way of presenting lesson content. In other programs, albeit fewer, the Spectrum is woven into two or possibly three professional preparation courses in which Spectrum theory is presented and opportunity for practice provided. In even fewer programs the Spectrum serves as a framework for organizing and delivering pedagogical knowledge.

A planned sequence of educational experiences that combines theory, observation of demonstration, practice and feedback under protected conditions, and practice and feedback in the "real world" setting (Joyce, Weil, & Showers, 1992) serves to enable the preservice teachers to experience success in the Spectrum, and, in turn, understand the teaching-learning process. Knowing the theory (principles and rationale) associated with a new teaching style helps one better understand when and how to use it. Observing demonstration lessons of a new teaching style, demonstrations presented by instructors who are relatively expert in the method, helps one visualize how the style unfolds in action. Practicing under protected conditions with feedback (e.g., with peers, one child, or small groups of children who are relatively easy to teach) allows one to get a "feel" for the style. Finally, practicing under "real world conditions" in the presence of a peer coach, a fellow teacher who is also new to the teaching style, enables one to working a new instructional method into his/her teaching repertoire.

According to Joyce et al. (1992) learning a new teaching style requires all four of these elements. Examining the theoretical rationale, observing demonstrations, and practicing with feedback under protected conditions will enable most individuals to acquire the skills associated with using a new teaching style. However, taking that new teaching style and transferring it into one's regular teaching repertoire requires practice teaching in the school setting in the presence of a peer coach.

In the remainder of this paper I will describe how the Spectrum is woven into the movement (activity), professional preparation, and field experience courses of a four year PETE program. Specific information about each course in this sequenced progression of courses is presented in Figure 1. The manner in which the Spectrum is intertwined in the program reflects the elements that Joyce et al. (1992) postulate as essential for the successful implementation of a newly acquired model or style of teaching. I will then discuss the conditions and practices that contribute to coherent teacher preparation programs specifically as they apply to the PETE preservice program described in this paper.

Place Figure 1 About Here

First Exposure: Participant

The student's first exposure to the Spectrum is as a participant. This occurs in one of the four movement core-activity courses students complete during their first two years in the program. The four movement core-activity courses are based on the skill theme and movement concepts approach (Graham, Holt/Hale, & Parker, 1998). The movement core-activity 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. This represents the students first formal exposure to the Spectrum of teaching styles.

Theory, Demonstration, and Practice I: One-On-One Teaching

After having been exposed to the Spectrum as participants, the preservice teachers learn more about four Spectrum teaching styles through theory, demonstration, and practice. The teaching styles of focus are the practice (B), guided discovery (F), convergent discovery (G), and divergent production (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 (junior and senior years). Teaching Lab I combines instructional theory with opportunity to practice.

Teaching Lab I is designed to give the preservice teachers opportunity to acquire the knowledge and develop the skills necessary to provide young children developmentally appropriate movement experiences. During the first half of the course the preservice teachers are introduced to the four aforementioned styles of teaching through lecture, discussion, demonstration, and peer practice. During the second half of the course they incorporate the learned styles in the lessons they are required to teach to young children. Each preservice teacher instructs one four or five year old child in the areas of skill themes and movement concepts and physical fitness. The preservice teachers must employ at least two of the four 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 teaching styles. Teaching styles from the reproductive and productive clusters are introduced at this early stage to help the preservice teachers better understand a learner's capacity to discover movement concepts and capacity to replicate skill models. Practice-teaching is conducted under highly protected conditions in Teaching Lab I (Joyce et al., 1992).

Theory, Demonstration, and Practice II: Small Group Teaching

The next two courses in the sequence that have Spectrum instruction at the core are Teaching Methods in Physical Education and Teaching Lab II, the accompanying field experience course. Concurrent enrollment is required of the students in these two courses. The underlying premises and assumptions of the Spectrum and its teaching styles are presented to the students via lecture, discussion, observation, and demonstration in the methods course. Opportunity to practice each style with fellow classmates, to learn the nuances of each style, is also provided during the methods course. Once the preservice teachers have gained a minimal level of competence and comfort in a given teaching style they incorporate that teaching style in their lessons in Teaching Lab II.

In Teaching Lab II the preservice teachers incorporate Spectrum teaching styles in their day-to-day instruction with elementary and middle school learners. Two K-8 parochial schools serve as the teaching sites for Teaching Lab II. Each preservice teacher delivers four 3-week instructional units to different grade groups comprised of 10 to 15 learners during this semester-long field experience. The physical education curriculum, as developed by the university supervisors, is based on the skill themes and movement concepts approach (Graham et al., 1998).

The preservice 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 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 more comfort with one or two of the teaching styles by the end of the course because they have attempted these teaching styles a greater number of times than the others. In some cases they have attempted one or two styles a dozen times. Joyce et al. (1992) report that until teachers try a new teaching strategy 10 or more times, they will continue to feel a certain level of discomfort.

A criticism leveled against faculty involved in teacher education is the lack of involvement in teaching school-aged children/youth. The instructors in Teaching Lab II are assigned to teach a three-week unit of instruction to elementary or middle school learners each spring semester. One of the expectations of the instructors is to incorporate Spectrum teaching styles in their daily instructional routine. While the faculty teach, the preservice teachers serve as coaches. Reversing the roles (teacher and coach) has had significant impact on both the preservice teachers and instructors. Much has been learned by both groups since adding this twist to Teaching Lab II.

Theory, Demonstration, and Practice III: Teaching in the Public Schools

During their senior year the preservice teachers are enrolled in two courses that have Spectrum instruction at the core. These courses are Teaching Lab III and Curriculum Development. In Lab III the preservice teachers are no longer practice-teaching under protected conditions. Rather, they are practice-teaching under "real world" conditions in the presence of a peer coach (Joyce et al., 1992). The preservice teachers teach daily physical education to full classes of elementary and secondary learners in a public school setting. 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 observing their partner teach for one lesson. While their partner teaches, the non-teaching partner takes the role of peer coach. By the end of Teaching Lab III the preservice teachers have practiced each teaching style (A-H) 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. The functions of the peer coach include provision of companionship, analysis of application, and analysis of learner expectations (Joyce et al., 1992). Companionship provides reassurance that problems are normal and shared. In analyzing the application of a given teaching style the peer coach can help determine the match between the desired objectives and the appropriateness of the selected

teaching style. Each teaching style has a matching set of student expectations. Whenever a new teaching style is introduced, students must become acquainted with what is expected of them. In following these three functions the peer coach makes the transition between practicing in protected conditions and practicing in the workplace easier. In turn, the quality of the peer coaching relationship will effect the likelihood of a teacher feeling competent enough to incorporate a new teaching style in his/her teaching repertoire.

In the Curriculum Development class the students are required to reflect on the teaching they do in Teaching Lab III. Class discussions bring to life the preservice teachers' successes and failures as they relate to general education and Spectrum specific issues and concerns. The preservice teachers also learn about the relationships between the reproductive and productive teaching styles and the different curriculum models (e.g., reproductive teaching styles are preferred 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, who are now student teachers, are provided an 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 levels (7-12). The student teachers are expected to continue to incorporate a variety of teaching styles in their teaching during the student teaching experience. However, this expectation is embedded in the reality that a student teacher is frequently placed with a cooperating teacher who knows 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 the teaching styles in their teaching.

Having few cooperating teachers who are Spectrum literate 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 teaching style through lecture (videotape), observation of demonstration episodes (videotape), class readings (text), class discussion (teleconferencing), and practice. After lecture, demonstration, reading, and discussion, the enrollees plan, implement, and assess at least three episodes of the presented teaching style each week in their own school settings. In the succeeding class the in-service teachers are given time to ask questions and share successes by telephone.

Mosston and Ashworth's (1994) *Spectrum of Teaching Styles* serves as a framework for understanding the teaching-learning process in the PETE program described. The steps proposed by Joyce et al. (1992) on how to learn a new teaching repertoire are employed for the purpose of structuring the sequence of courses that the preservice teachers complete over the last three years of the four year program.

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 framework, the Spectrum, around which many of its courses revolve. Unlike other frameworks for understanding the relationships between teachers and learners, the Spectrum has been designed specifically for instruction in physical education.

In the described program students learn about the Spectrum of teaching styles through a planned sequence of educational experiences that combines lecture, discussion, observation of demonstrations, and practice and feedback in protected conditions and the real school setting (Joyce et al., 1992). The Spectrum is at the core of one movement, two pedagogical, and four field experience courses. That makes it central to a total of seven courses. In this program the Spectrum serves to facilitate the understanding of the teaching-learning process.

The delivery of these seven courses is shared across five faculty members. All five understand the Spectrum and the role it plays in the preservice teacher's understanding of the teaching-learning process. The faculty accept the Spectrum as central to the curriculum and in doing so share a common belief about the value of having a focal point for a PETE program.

The teachers with whom the preservice teachers are placed for practical experience are well versed in the PETE program, specifically the Spectrum. A close connection exists between the campus activities and those occurring in the schools. Faculty in this program view the teachers as equal partners in the development of future physical educators. This can only occur when the beliefs of one group closely match the beliefs of another group. Although we have made strides in developing a coherent connection between the University program and the schools, there is still much room for improvement, particularly with the student teaching experience.

After the students complete their first two years in the PETE program, they must make application for entry into the final two years of the four year program. Approximately 20 students are selected for entry each year. Once selected the 20 preservice teachers complete all of their junior and senior level Spectrum related PETE courses together. The preservice teachers function as a cohort group during this two year period of time. This allows for the development of close student and PETE faculty associations.

The Spectrum is at the heart of this teacher preparation program. It serves to facilitate the understanding of principles and concepts related to teaching and learning. It represents a "common language" for all of those involved in the preparation of physical education teachers at the University of Wyoming. In essence, it serves as a framework to unify our work.

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. At the present time the major elements of the program are in place. Faculty must now refine these individual elements which, in turn, will serve to develop more effective beginner teachers. However, the value of any program must be substantiated through research. We are now in a position to research the effectiveness of the program. Over the next five years we plan to research the impact of this undergraduate program. Questions of interest include: (a) What impact does this educational program have on the cognitive behaviors of its program graduates?; (b) What impact does this educational program have on the instructional behaviors of its program graduates?; (c) Why (and why not) do the program graduates employ Spectrum teaching styles in their instructional routines?; and (d) What are the long term effects of this educational program on the graduate's use of the Spectrum teaching styles?

References

- Ashworth, S. (1992). The Spectrum and teacher education. *Journal of Physical Education, Recreation, and Dance*, 63(1), 32-35, 53.
- Byra, M., & Jenkins, J. (1998). The thoughts and behaviors of learners in the inclusion style of teaching. *Journal of Teaching in Physical Education*, 18, 26-42.
- Franks, D. (Ed.). (1992). The Spectrum of teaching styles: A silver anniversary in physical education [Special feature]. *Journal of Physical Education, Recreation, and Dance*, 63(1), 25-56.
- Gerney, P., & Dort, A. (1992). The Spectrum applied: Letters from the trenches. *Journal of Physical Education, Recreation, and Dance*, 63(1), 36-39.
- Goldberger, M., & Gerney, P. (1986). The effects of direct teaching styles on motor skill acquisition of fifth grade children. *Research Quarterly for Exercise and Sport*, 57, 215-219.
- Goldberger, M., & Gerney, P. (1990). Effects of learner use of practice time on skill acquisition of fifth grade children. *Journal of Teaching in Physical Education*, 10, 84-95.
- Graham, G., Holt/Hale, S.A., & Parker, M. (1998). *Children moving: A reflective approach to teaching physical education*. Mountain View, CA: Mayfield.
- Greenspan, M.R. (1992). The Spectrum introduced: A first year teacher's project. *Journal of Physical Education, Recreation, and Dance*, 63(1), 40-41.
- Griffey, D. (1987). Trouble for sure: A crisis---perhaps. *Journal of Physical Education, Recreation, and Dance*, 58(2), 20-21.
- Holmes Group (1986). *Tomorrow's teachers: A report of the Holmes Group*. East Lansing, MI: The Holmes Group.
- Holmes Group (1990). *Tomorrow's schools: Principles for the design of professional development schools*. East Lansing, MI: The Holmes Group.
- Holmes Group (1995). *Tomorrow's schools of education*. East Lansing, MI: The Holmes Group.
- Howey, K., & Zimpher, N. (1989). *Profiles of preservice teacher education: Inquiry into the nature of programs*. Albany, NY: SUNY Press.
- Joyce, B., Weil, M., & Showers, B. (1992). *Models of teaching* (4th ed.). Boston: Allyn and Bacon.
- Locke, L. (1992). Changing secondary school physical education. *Quest*, 44(3), 361-372.
- Mellor, W. (1992). The Spectrum in Canada and Great Britain. *Journal of Physical Education, Recreation, and Dance*, 63(1), 47.
- Mosston, M. (1966). *Teaching physical education*. Columbus, OH: Merrill.
- Mosston, M., & Ashworth, S. (1994). *Teaching physical education* (4th ed.). New York: Macmillan.
- Mueller, S., & Smith, R. (1999, April). *Mosston's Spectrum of teaching styles at east Stroudsburg University*. Paper presented at the meeting of the American Alliance for Health, Physical Education, Recreation, and Dance, Boston.
- Purkey, S.C., & Smith, M.D. (1982). Effective schools: A review. *The Elementary School Journal*, 83, 427-452.
- Siedentop, D. (1987). High school physical education: Still an endangered species. *Journal of Physical Education, Recreation, and Dance*, 58(2), 24-25.
- Siedentop, D., & Locke, L. (1997). Making a difference for physical education: What professors and practitioners must build together. *Journal of Physical Education, Recreation, and Dance*, 68(4), 25-33.
- Telama, R. (1992). The Spectrum in Finland. *Journal of Physical Education, Recreation, and Dance*, 63(1), 54-56.

COURSE TITLE AND CREDITS	WHEN COURSE IS COMPLETED	CLASS MEETINGS PER WEEK	HOURS OF CONTACT PER WEEK	FACULTY ASSIGNED
Movement Core: Striking and Volleying	Sophomore Year, Spring Semester	Daily	Five	1
Teaching Lab I	Junior Year, Fall Semester	2	4	2
Teaching Lab II	Junior Year, Spring Semester	3	6	2
Methods of Teaching	Junior Year, Spring Semester	3	3	1
Teaching Lab III	Senior Year, Fall Semester	Daily	10	2
Curriculum Development	Senior Year, Fall Semester	2	2	1
Student Teaching Experience	Senior Year, Spring Semester	Daily	40	5

Figure 1. Courses in which the Spectrum is central.