

# The Spectrum in Finland

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*This article highlights reasons why the Spectrum is so important for teacher education in Finland, applications of the Spectrum to the training of physical education teachers, and research work based on Spectrum concepts.*

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**F**inland has a long tradition of university-level training of physical education teachers, which started at the University of Helsinki in 1882. In 1963, this training was introduced at the University of Jyväskylä. After the Institute of Physical Education was closed at the University of Helsinki in 1974, the University of Jyväskylä remained as the only institution in Finland to provide such training. Soon after *Teaching Physical Education* (Mosston, 1966) was published, it was adopted as the primary teaching methodology textbook by the Department of Physical Education.

In the 1980s, Muska Mosston and Sara Ashworth taught several continuing education courses for Jyväskylä faculty members. For the past two decades, since all Finnish graduates in physical education have come through Jyväskylä, every Finnish physical education teacher now knows something about the Spectrum.

On the basis of Mosston's pioneering work in developing teaching styles, and his contribution to the promotion of teacher training at the Jyväskylä University Faculty of

Sport and Health Sciences, the university faculty awarded him the honorary degree of Doctor of Physical Education in 1984.

## ***Why the Spectrum is so Important***

One of the central problems in physical education is lack of linkage between content and process. In Finland, curricula have been clearly content-oriented. The belief in the importance of subject matter is still seen in expressions such as, "Team games are educationally valuable through their socializing effect." A curriculum that comprises only lists of things to be taught provides very little support to the teacher, particularly in the area of process. For example, social behavior cannot be acquired by speaking or by participating in a team game. It is acquired only in activities which comprise true social interaction and in which social activity can be internalized as a new objective and the motive for the activity. The Spectrum helps connect content with process and shows clearly how different things are learned by different methods.

Early in its inception, the Spectrum called attention to method-

ological considerations—such as the development of intrinsic motivation and perceived competence—which are now supported by modern psychology research. The Spectrum includes an analysis of the importance of feedback, especially feedback given in different ways. For perceived competence, feedback must come from several sources, and a person must evaluate others and provide feedback (as in the Reciprocal style). To develop both intrinsic motivation and perceived competence, a person must learn to evaluate his or her own performance and give self-feedback (as in the Self-check style). Another important feature in the Spectrum is the emphasis on cognitive operations. For instance, research on motor learning concerned with learning strategies indicates that physical activity, which has usually been seen to comprise primarily physical elements, also involves a large number of cognitive aspects.

## ***Training Physical Education Teachers in Finland***

Similar to all higher education in Finland, physical education teachers are trained in a five-year master's

degree program. The training is scientific and multidisciplinary but also incorporates a practical orientation. A problem in providing a comprehensive teacher education program is connecting theory and practice. The problem of "connecting" is concerned with, among other things, the ways in which theory and practice are interlinked (e.g., academic study and didactic practice), and the coordination of different instructors in teacher education. In the last few years, the Department of Physical Education has been involved in an examinations reform, called a "qualitative educational reform." The core of this qualitative enhancement attempts to solve the connecting and coordination problems, in which the Spectrum has been an important asset.

For linking theoretical studies and teaching practice, experiences with both must be intertwined. This is especially important when the role of student is transformed into the role of teacher. Students in teacher education programs should be exposed to schools and teaching as early as possible. Under the auspices of the present degree program, the students visit schools as early as the first semester. During the second academic year they spend a week or two in a school observing physical education teachers, making notes about the teaching and possibly also serving as teaching assistants. The third year includes a school period, the time when the actual teaching practice begins through a micro-teaching course. The teaching practice is continued through the fourth and fifth year under the supervision of the Teacher Education Department. This means that students have a link of some kind with teaching practice throughout their academic preparation.

Mere passive observation of teaching, or even personal teaching practice, does not promote the linkage of theory and practice. Students need a didactic framework of some sort into which they can incorporate both their observations and their experiences derived from teaching

practice and their knowledge derived from theoretical studies. Here again, the Spectrum has been very helpful. Students are given a brief introduction to the basic ideas and structure of the Spectrum. Before the first school visits they participate in a seminar which deals with concepts relating to teaching and learning, such as the roles of teacher and student, feedback, time on-task, and the interrelationship between goal and activity. The students may select a certain theme which they observe during the school visit. Students then attend a follow-up seminar where reports from the visit are discussed.

Another connecting problem relates to the coordination among instructors. Instructors approach their teaching assignments differently in terms of both content and process. It has not yet been possible to coordinate the teaching and supervision

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of all faculty members. Even the instruction and supervision provided by the Department of Physical Education must be coordinated, especially since the department provides much of the practice teaching. The department has two professors and 12 lecturers who are concerned with didactics. If all of these faculty members dealt with problems relating to

teaching methods within their own frameworks without paying any attention to how others are teaching, students could end up in a very difficult situation.

As a part of the qualitative development, the department organized staff seminars aimed at coordinating the instruction and supervision provided by faculty members. Instructors describe their teaching practices at these seminars, and whenever overlaps or inconsistencies are found, attempts are made to remove them.

Most instructors who are concerned with teaching methodology have become acquainted with the Spectrum, either through literature or through courses offered by Mosston and Ashworth. Not every teacher applies the Spectrum perfectly, but it has been used as a common framework and a common language among the faculty, and between the faculty and students.

In May, 1989, Muska Mosston collaborated with the department to organize a staff seminar. This time Muska did not teach; instead, each faculty member concerned with teaching methodology described the ways in which he or she applies the Spectrum. Muska listened to them and commented upon what he heard. The seminar was both interesting and illuminating in that the teachers presented totally new aspects of the Spectrum. For instance, a swimming teacher analyzed the Spectrum in terms of the teaching environment of swimming (i.e., water). A dance teacher, and other teachers, described some interesting combinations of styles.

#### *The Spectrum and Research*

An interesting research program derived from the ideas expressed in the Spectrum and explained in a doctoral thesis by Sinikka Kahila was developed in the Department of Physical Education. The program investigated the impact of interactive pair work (Style C) and individual work (Style B) on social behavior, particularly help behavior, and on social relationships.

In the first phase of the program, three groups were studied: one (fifth-grade girls) who were taught using Style C, another using Style B, and a control group using the school's regular program. In the pair-work group, the pairs were rotated for every period. The Style B and C groups were taught by the same teacher, and both also had the same teaching content. The experiment lasted through the school year. The Style C group progressed significantly more than the individual work group and the control group in terms of social behavior as measured by means of help behavior and sociometric scales. The control group, whose program consisted of the greatest number of team games, showed the poorest development in help behavior and social relationships. The results were recorded and confirmed on videotape. The physical fitness and competence objectives were achieved in the Style C group, at least as well as in the other groups (Kahila, 1987).

During the second phase of the study, which again took a whole school year, the same arrangement was repeated with the exception that two of the three groups were interactive (Style C). In one group, the pairs were rotated for every period, and in another group the students were free to choose their partners. In the third group, Style B was applied throughout the experiment. The results indicate that the group in which the pairs were rotated for every period progressed more in social behavior than the other groups. Thus, it seems to be important for students to get used to working with as many different people as possible to improve their social learning.

The Spectrum has been recognized in Finland for a rather long time. It is difficult to say what kind of impact the Spectrum has had on physical education in Finnish schools. In any case, the Spectrum has proved to be valuable in training physical education teachers since it provides a framework for teaching methodology and a common language for teachers and students. In addition, it has provoked important research work that has confirmed

Spectrum theory. The Spectrum is not just a theory on paper, but is a theory based on practice.

#### References

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