

Chapter 10

Self-Organization Technologies in Teaching

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ABSTRACT

This chapter deals with self-organization teaching technologies as the best instrument of generating, development and using of the innovative methods in education. As a process of spontaneous, dynamic motion of the components of a socio-system, self-organization can randomly generate new (often attractive) structures, processes, and situations. Self-organization of a student group can generate new techniques and ideas for learning and under the knowledge contents also increases students' motivation to learn, interest to the discipline, encourages teachers to professional self-development and to a deeper understanding of the subject matter and techniques. The section suggests several key ways to initiate the self-organization of a group of students or teachers: heuristic methods, interdisciplinary explication, educational heterosis, developing of managerial competencies of a teacher. Factors enhancing the use of self-organizational teaching technologies are disclosed.

INTRODUCTION

This chapter examines innovative methods in education in relation to self-organization technology development and use. *Innovations in education* are methods, forms and technologies apparent in educational space for the first time to improve the efficiency of the educational process and the quality of the resulting competencies: knowledge, skills and abilities of learners. These purposes can be achieved not only by methods and forms of education that are more effective according to time, efforts, or finance (economic effectiveness)

or by the criteria of social efficiency: comfort and satisfaction of students. A second component of the mechanism of efficiency of educational innovations is their novelty. Novelty is attractive. Traditional, stereotypical methods invoke the effect of habituation and as a result, motivation of students (and teachers) to learn reduces. Innovations arouse interest and this becomes an additional incentive to obtain or generate knowledge.

Four main types of innovations in education, which involve both teachers and students to a certain extent, can be distinguished. These types are innovative forms of teaching and learning;

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innovations in the content of teaching material; innovations in the management of educational institution; and marketing of educational services. The first is the most technological component of innovation that can be implemented by teachers without external assistance, regardless of positive or negative circumstances. The second deals with the conceptual revolution of the mind, with new objectives of the educational process. More specifically, it deals with new expectations, new views of graduating students with new personal and professional characteristics. Innovations of the third type mostly depend not on the will and initiative of teachers but on administrative frameworks and guidance. Clearly administration of the institution also plays an important role in realization of these types of educational innovations. And the fourth type, despite the importance of explicit or hidden curriculum involving teachers in marketing procedures, requires radical diversification of teachers' professional activity. It is possible, but it needs additional investigation in research. For this reason, practical attention often is focused on innovative forms of education that can be learned, developed and introduced into the learning process by teachers themselves. They can be introduced based on principles of self-government, self-stimulation and self-discipline.

The main problem connected with innovative teaching methods is the complexity of productive, creative activity, which is the main condition of innovation emergence and implementation. Innovations very quickly expire, as after their effectiveness is proved they are widely used in educational practice. Thus they gradually become tradition, which reduces their motivational function. So, the next generation, or cycle, of innovations is needed often. Is a typical, average teacher (as well as educational manager) always ready for such intensive creative activity? Probably not, as not too high of a percentage of teachers want to diversify educational methods. But an endless source of new ideas for educational innovations exists. This source is self-organization. As a

process of spontaneous, dynamic motion of the components of a socio-system, self-organization can randomly generate new structures, processes, and situations, which often are very attractive. A teacher only needs to see them and to understand which way to direct the resonance effect in order to obtain the desired result with economizing of time, costs and efforts. This chapter is devoted to analyzing the relationship of self-organization teaching technologies and teachers and students' creativity that is needed for innovations. It reveals basic ways to initiate self-organization of students and identifies factors enhancing the process of generating and using self-organization teaching technologies.

BACKGROUND

Ideas that underlie self-organization teaching technologies concern not only the nature and mechanisms of the self-organization process, but also the concepts of creativity, network-based learning, learner-centered methodology of teaching, and innovations in education. It is important to understand innovations in education in the broad sense, including both technologies and competencies. Both these aspects form the background of the issue of self-organization technologies in education.

Mennin (2010) writes about the peculiarities of complex subject and course teaching. In this case, he proves that the complexity of knowledge requires more than a simple linear transfer of information from teacher to students, but needs a self-organization approach and methods. Furthermore, from year to year it becomes more obvious that a teacher cannot just give students knowledge. Rather, he or she should teach students to learn through their whole life, to obtain and process information, which they will need at any moment. That is to say, knowledge in any field is quite complicated today, because of the huge amount of information, and because it is chang-

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