Chapter 7
Soft Systems Methodology as an Approach to the Management of Education

ABSTRACT

Soft systems methodology (SSM) as an action research process has been applied to education systems and, according to the main objective of this chapter to design an improved education system, the applications of SSM in the process of teaching and learning, educational planning, analysis of the examinations department, an educational context for enhancing students' perception and understanding, the cheating problem in the national examination in Indonesia, and personalized learning environment are reviewed. The SSM can be used to analyze the system through providing a deeper understanding as well as the possibility of more clearly capturing the change, which is necessary to prepare the ideal education system that will satisfy the concerned people, specifically students and lecturers.

INTRODUCTION

Secondary schooling has been the target of soft systems approach, hypothesizing headmasters as managers of resources rather than head teachers (Wilson, 1992). Moreover, high education lecturers can use soft systems methodology (SSM) to analyze their teaching and learning methods. It provides the chance for them to conduct a self-audit of teaching and learning strategies. Therefore,

SSM is considered as a particularly good tool for self-analysis since it involves the intellectual activity of conceptual modeling. Patel (1995) conducted a study at the level of undergraduate education in order to obtain a deeper understanding of teaching and learning process in this level, providing an appropriate action to improve the process.

Hawkesbury Agricultural College, as Macadam and Packham (1989) reported, was the first place where reforming the educational programs began in 1978. The new programs, mainly departed from the previous methods, i.e. didactic and discipline-based curricula, are relied on experiential learning and systems thinking and practice. As a result of considering the needs of the new curricula and failures to overcome them, the projects improved in 1983-4, leading to a radical restructuring of the School of Agriculture in 1985. The way was indicated by SSM.

Implementing technology at universities has two sides; one side is the university using technologies for virtual learning that is outdated since the needs of the students are more digital now, and the other side the focus is primarily on technology rather than the learning process. According to Nair (2015) SSM may contribute to bring the two sides together through working with different stakeholders at the university as well as considering the needs and requirements to satisfy the learning needs and styles of learners in a personalized learning environment; hence, the institution/tutor-centric approach would shift to a learner-centric one in the educational paradigm.

SSM was the method by which Yadin (2013) could identify the students' difficulties, particularly on unstructured and poorly defined problems. This study aimed at identifying the cause for the low grades in the assignments on computing issues in order to plan corrective actions. Widely used in messy situations to provide a better and deeper understanding of the system while incorporating a variety of viewpoints, SSM was selected to be under investigation in this study. The students' specific difficulties were identified by using SSM to analyze their perceived learning system and a real life example, on the other hand, could be provided as well. Then, the changes were applied to the course structure to address them in a more appropriate way. In addition, SSM as an action research process is performed in several analysis cycles. In case of arising new problems or insufficient improvements after applying the change suggestions, a new cycle of analysis is performed.

Designing an improved education system by using SSM is the main objective of this chapter. In this context, the application of SSM to the teaching

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