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Project Based Learning from Elementary School to College, Tool: Architecture

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Abstract

As is known education is the most important factor for the sustainable development of societies. The problems that encountered in the education system, impact this development process negatively. From elementary school to college, in every periods of education, one of the most common problems in education is “inability of internalizing the knowledge” and “relating the theoretical knowledge with real life”. The aim of this study is, to provide this relationship by a multidisciplinary research. For this purpose, architecture discipline and its educational approaches, methods and techniques are analysed. Architecture education includes varied methods for learning. But the main approach is established on “learning by project” method. This method was supported by Dewey’s constructivist approach. Project based learning which has origin grounded on architecture, is started to be used in also primary education today. This paper explains the multidisciplinary interaction between architecture discipline and educational sciences and calls attention to the benefits of project based learning.

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1. Introduction

Education is a defining factor in the progress and development of societies. "Education", related to concepts of learning and teaching, is defined as "the process of raising an individual for certain purposes" in general (Fidan and Erdem, 1998). As for learning, it is a fundamental requirement of education and it is among the issues which educational sciences deal with; which occupies a greater place in discussions when compared to the concept of "teaching". The most general definition of learning, which is discussed under psychology, is expressed as "the forming of permanent changes in behaviours via experiences" (Senemoğlu, 2009).

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A well-known tenet of the modern education approach is that it transforms the individual from a passive receiver position, in which the learner receives information from the teacher, to a learner which searches, examines, accesses information and makes sense of this information. Today, not only how the learning was performed but also the permanent learning techniques and the usability of this information in real/practical life are among research topics. In this respect, student-centred and process-based learning approaches have been attached more significance recently. "Project Based Learning" is a prominent one among the aforementioned approaches and has been used in the educational system in Turkey since 2005, after the amendments in the National Education Program.

2. Project Based Learning Model as a Constructivist Learning Process

Project Based Learning approach has become an educational approach which is attached more and more information due to the prominence of student-centred education in recent years. The foundations of this approach are closely related to Dewey's theory of constructivism. Dewey's constructivism has philosophical and sociological roots reaching far back to a 18th century philosopher, Vico, who states "if someone knows the parts of something then he knows that something"; later continuing with Kant's "the individual does not take in information in a passive way, rather in an active way and then he compares it to what is known before and interprets" (Kanlı, 2009). Dewey, in his "Experience and Education", considers learning by doing as a means of causal relationships between objects and concepts. Dewey makes mention of the significance of similar reconstruction of the learned knowledge and experience in other cases and times; and its use in interpreting and analysing different cases (Dewey, 2013). The idea that constructivist approaches outperform the traditional learning approaches with regard to the permanence of learning has been argued for by many educational theoreticians, particularly Dewey. In constructivist learning approach, in which the student has an active role, active participation modes such as discussion, defending ideas, forming hypotheses and sharing opinions rather than reading and listening passively. In this approach, the interaction of individuals is of great significance. The learners do not accept information as it is but they discover or form it (Perkins, 1999).

Wilson argues that numerous strategies could be used in constructivist approach. "Project studies, learning by designing and cooperative learning" are the most widely used strategies (Wilson, 1997). Project Based Learning model which lays its foundations on project studies is an approach which positions the learners in the centre of the learning process and prepares them to the actual life by exposing them to real life problems. This is an education approach based on imagination, planning and fictionalising, which positions the student in the centre and brings real life situations into the classroom. Dewey, with another educational theoretician Kilpatrick, mentions the significance of using "real life" as material in project studies (Williams, 1998).

It is possible for the students to acquire knowledge which is more permanent and makes more sense via the project based learning within constructive approach; because, learning by doing yields more permanent results when compared to only listening to the lesson, and in this way the student has the opportunity to materialize the abstract concepts, he or she could gather examples from real life and could relate to different disciplines. There are studies that show that the achievements of students in project based learning are higher than the ones in traditional teaching practices (Solomon, 2003).

With all these advantages, it can be argued that project based learning approach is "an approach preferred more by the students and increases the level of learning" (Winn, 1997). In addition, the student's control on his learning process and his individual constructing of knowledge renders the experiences acquired more valuable. In this approach, the student could behave freely during the learning process, take decisions and present his achievement to others.

2.1. Origin of Project Based Studies: Architecture

Knoll who has conducted studies on project based learning argues that the idea of using projects as an educational tool in schools had emerged as an educational movement in architecture and engineering in the last decades of 16th century in Italy (Knoll, 1997). The first application of project based learning, which is the main approach in architecture education, was seen in Ecole des Beaux-Arts. Dewey (1987) who argues for constructivist

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