# THE CONTRIBUTION OF PROJECT BASED-LEARNING IN THE DEVELOPMENT OF STUDENTS' SKILLS IN SENIOR HIGH SCHOOL

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## Abstract

This qualitative research reports on the contribution of project based-learning as an evaluation tool for the development of student's skills in the first grade of Senior High School. The aim of this study is to investigate the attitude of teachers' sample towards the use of project in the educational process. The participants are secondary teachers from two school environments (one standard provincial and one experimental High School in urban area). The research questions are structured through observation (participant and non-participant) and are examined through ten semi-structured interviews from the teachers that were mentioned above. The research empirical findings point out the positive attitude of the sample teachers concerning the use of project in school environment which connected with the positive meaning of method, the upgrading of educational process, the connection between project and philological subjects, the connection between project and modern Greek, the implementation of project, the comparison between project and traditional teaching, the expectations about the project and the skills which are fostered through the project. In conclusion, this study includes the investigators' conclusion regarding the contribution of the project as an alternative and authentic evaluation in contemporary teaching environments.

*Keywords: Teacher education, evaluation tool, skills.*

## 1. Introduction

Project is a method that is primarily associated with authentic learning, through which students can develop a variety of skills and knowledge strategies. Initially, Bagheri et al. (2013), emphasize that through the *action plan*, students build new knowledge on the past (constructivism) leading to the acquisition of strategies through guided learning. Habok and Nagy (2016) point out the connection of the project with social constructivism (Vygotsky), in the context of which and through the upcoming development zone (ZEA) students acquire metacognitive and collaborative skills in response to creativity, a concept-challenge for current education. In addition, Ayas and Zeniuk (2001) refer to the characteristics of the method, in which, the project has a purpose which is defined from the beginning, so that the members can achieve it and then, it includes the organization and the work of the students in learning communities. Scholars also point out the importance of reflection, accordingly, where students according to Scarbrough et al. (2004), on the one hand have the opportunity to absorb new knowledge and relate it to the former and on the other hand to develop self-knowledge, leading to self-determination and self-diagnosis.

In conclusion, as emerged from the bibliography review and the findings of previous research, a lack of data is identified regarding the contribution of the project to the cultivation of skills in the context of the teaching of Modern Greek Language in Secondary education in general and in the school level of Senior High School, in the first grade in particular. This article will attempt to study and research the connection of the project a) with the teaching of the Modern Greek Language in education especially in the first grade of Senior High School and b) with the cultivation of specific skills and also to take into account previous research focusing on different themes.

## 2. Theoretical framework

### 2.1. Method of project

Project is very important to education, as it is understood as a dynamic tool for approaching learning, but also for evaluating students. At the same time, the implementation of the method is connected according to Fragoulis and Tsiplakides (2009: 113) with the basic pedagogical principles expressed by Chrysafidis (2005) and are related to the promotion of creativity instead of memorization, the active participation of students in learning process, but also the contact with events that are related to reality as a means of learning. The traditional teaching can thus be based on the one hand on planning, organizing and controlling learning with specific goals and objectives, but on the other hand due to the continuous development of education, more skills are required. In fact, the thinking (and reflection) practices that are part of the project are the first step that brings students in contact with culture, without implying that the implementation of the action plan will automatically bring about the acquisition of knowledge. The implementation of such actions could bring benefits over time in significant conditions and with efforts, both by the teacher and the student (Ayas and Zeniuk, 2001: 62-64).

### 2.2. Project and constructivism

Constructivism derives from the learning theories of Dewey (1916), Piaget (1978) and Bruner (1990) and is defined as the construction of new knowledge based on the students' prior knowledge. Constructivism is thus understood, either as cognitive or as sociocultural. Socioculturalism is, in fact, which is in direct correlation with the project, as its members interact with each other. Lev Vygotsky is considered to be the pioneer of the term, with learning structured through experience (Gunduz and Hursen, 2015: 527) and taken as a social process, emphasizing on the social nature of knowledge and on the assumption that the world is not understood individually, but collectively with emphasis on social interaction, experimentation and group negotiation (Doolittle & Hicks, 2003: 80).

Thus, compared to traditional learning theories, constructivism facilitates knowledge through connection with prior knowledge and with the contribution of technology it helps to lead students to deeper connections favoring their participation in technological educational environments (Gold, 2001: 53-54).

### 2.3. Authentic learning and evaluation through the project

The modern approach of evaluation is linked to the authentic evaluation. Authentic evaluation, as a term, was introduced by Archbald and Newman (1988), with most scholars considering it authentic, as it is being directly related to the real world (Frey, Schmitt and Allen, 2012: 1), while for others it is an alternative approach to developing students' knowledge (Charoenchai, Phuseeorn and Phengsawat, 2015: 2524). It is linked to group organization, thus constituting the three qualities of authentic evaluation according to Bergen (1993), as cited by Frey, Schmitt and Allen (2012: 1). Regarding project evaluation it is important not to rely on standard exercises in conjunction with formal evaluation, which leads students to a low level of understanding and is an inappropriate approach to teaching, but instead, it is important to use material handout, interviews (Blumenfeld et al. 1991: 383), or even self-assessment and hetero-assessment sheets both among students and between students and the teacher.

### 2.4. Skills in education

In fact, according to the distinction of the University of Deusto (Sanchez et al. 2008: 29-30), skills are divided into instrumental, interpersonal and systemic. Instrumental are those that are used to achieve a purpose and require a combination of manual and cognitive skills necessary for professional ability (cognitive, interpersonal, technological, linguistic). Interpersonal skills, on the other hand, are those that require personal and relational skills and are associated with the ability to express feelings and emotions in order to enable collaboration based on common goals. Finally, systemic skills include skills that require a combination of imagination and sensitivity, thus enabling the individual to perceive the parts of a whole, even when designing new systems.

## 3. Methodology

### 3.1. Purpose and aims of the study

The purpose of this research is to investigate the way in which a project can be a dynamic tool for the development of skills in high school students, revealing its importance in the school community, as discussed above in the Theoretical Framework. The present work focuses on demonstrating the project (central phenomenon) as a means of acquiring a variety of important tools with which students can develop a dynamic system of skills, thus contributing, on the one hand, to their overall development and on the other

hand, to upgrading the whole school community. More specifically, the present research sets the following objectives:

1. To utilize the project within the school community as a tool for 21st century development of skills.
2. To validate the project as an important method for the comprehensive development of students in the context of the educational process.

The ultimate goal is to demonstrate the need for cooperation between teachers and researchers, in order to see the positive results of such actions that contribute constructively to the development of modern educational research and through the research process to improve education.

## 3.2. Research questions

The formulation of the research questions is related to the purpose of the research and aims to limit the research field to a specific research problem in order to evaluate and evaluate the complex research work in real time. So, the research questions are:

1. What is the attitude of the teachers towards the use of the project during the educational process?
2. What are the teachers' views regarding the skills that students acquire from using a project in the Modern Greek Language lesson?

## 3.3. Method of analysis

The type of research chosen to investigate the central issue is qualitative research which differs from the quantitative. More specifically, the principles of grounded theory were followed, where the data were collected from teacher interviews and then analyzed, the analysis procedure being based on the central phenomenon in order to draw conclusions (Creswell et al., 2007: 247-248). Qualitative research, thus, constitutes an innovative type of research that offers researchers a holistic approach to reality and a multifaceted approach to a topic through the collection of a wealth of research data.

## 3.4. Procedure and data

The present survey was conducted during the first and second semester of the school year 2020-2021. The starting point of this research is initially related to the identification of the research problem in the context of the classroom and was investigated through the bibliography review with a focus on project. During the observation process in the school context of a Model school of Attica and a General provincial school, the observation of both students and teachers was exercised in the context of the composite research work, while it was utilized with the participation of the one researcher herself and a two-hour internship teaching. Therefore, in order to draw empirical data on the implementation of the project in the classroom and to formulate the Research Questions for the investigation of the research hypotheses of the present study, the observation of six sections of the First Grade of Senior High School was used. Then, research questions and themes were formulated for the semi-structured interviews with ten teachers of a General and an Exemplified High School (the former being a provincial public school outside Athens and the latter a school in Athens), five teachers from each school, gender: six women and four men. The semi-structured interviews contain seventeen questions related to the subject of the study and were taken by the teachers online (due to health impediment) through an electronic platform (skype, zoom). In more detail, before conducting the interviews, the profile of the teachers was studied (level of study, teaching experience), while then, semi- structured questions were selected in order to offer freedom to the participants in the research. During the interviews, notes were kept (interview protocol), while at the same time they were recorded with the consent of the teachers in order to have data cross-checking and ensure validity. After the interviews, the data were organized and coded through thematic analysis in order to approach the research issue. Finally, at all stages of the investigation, the consent and anonymity of all involved was ensured.

## 4. Analysis

## 4.1. First research question: Attitudes of teachers towards project use compared to traditional teaching

The majority of teachers reject traditional teaching as effective for the educational process, when they compare it with teaching using a project, as in the latter, they recognize very important elements for both the teacher, who ceases to function as an authority, and the student, who is activated and becoming interested in the learning process to the maximum extent. However, although in theory many teachers may seem open to new methods, there are still teachers who are distinguished by a hesitation for these methods, being reluctant to give them space for more testing as part of the educational process. In this way, common elements are detected with the phase of Kuhn's extraordinary science (Arjun, 1998: 21-22), where there is

a confusion between the communities of researchers and teachers and the decisions of those responsible for the textbooks, and the Curriculum. The decisions of the educational policy in general, also contribute to this. Teachers, thus, often act defensively against the new methods and remain attached to the familiar pedagogical routine (teachers 1, 3 & 10), an element that is also pointed out by Frydaki & Katsarou, 2013: 82. But this kind of teaching does not meet the requirements of teaching as set by Festermacher (1990, 181-182), nor does it lead the student to a state of apprenticeship. According to the constructivist example, teachers' choices may derive from their personal perceptions and theories, but it is important to move away from both them and their pedagogical routines (Frydaki & Katsarou,2013: 82), which they had become accustomed to as students, trying to adapt to the new data of modern teaching, aiming at broadening the student's perspectives.

## 4.2. Second research question: Teachers' views on the skills that students acquire from the use of the project in the Modern Greek Language lesson

The skills that teachers display can be said to follow the model of the University of Deusto (Sanchez et al., 2008: 60-61), according to which, skills are divided into instrumental, interpersonal and systemic. In terms of instrumental skills, these include cognitive, methodological, technological and linguistic ones. Starting with the cognitive ones, teachers 1 and 8 first detect the skill of learning *how to learn*, which is also highlighted by Binkley et al. in their own model (Griffin et al., 2012: 42), emphasizing that it is a metacognitive skill that leads students to their self-assessment. Combined with this skill, they also emphasize on the cultivation of critical thinking that makes students develop critical knowledge of things (critical literacy) instead of being inconspicuous recipients of any knowledge that may be arbitrarily displayed to them (teachers 4, 5, 9 and 10). In terms of interpersonal skills, except for one teacher who refers to student self-discipline cultivated in the project and integrated into individual skills, other teachers focus on social skills related to student interaction within the group and in cooperation with each other. This highlights the importance of social constructivism suggested by Vygotsky (1978), in which students develop social skills and collaborate with other members (Habok & Nagy, 2016: 3). Finally, according to Deusto's model, the systemic skills were not given much emphasis by the teachers, as they focused more on the first two categories of skills (cognitive and methodological).

## 5. Discussion-conclusions

Regarding the attitude of teachers towards the use of the project, most of them in the sample use the project method, in general, and in the Modern Greek Language course at the Senior High School, in particular, in their effort to upgrade the educational process, as they recognize many positive data in it.

The teachers in terms of the concept of the project seem knowledgeable of the method, while emphasizing that it quite often contributes to the upgrading of the educational process, as a whole. At the same time, the connection of the project with the philological lessons and the lesson of the Modern Greek Language is highlighted, while the implementation of the method focuses on goals and motivations centered on the student himself. At the same time, the teachers emphasize that with the project, students cultivate important skills that follow the model of the University of Deusto (Sanchez et al., 2008) and are divided into instrumental, interpersonal and systemic. In the instrumental cognitive skills, the skill of learning how to learn and the cultivation of critical and creative thinking is pointed out. Regarding instrumental methodological skills, teachers focus on student research (Blumenfeld et al. 1991), on the use of methodology, on the cultivation of abstract ability, on the prioritization of knowledge, on problem-solving skills (Mettas & Constantinou 2007) and on observation. In the tool instrumental skills, teachers emphasize on the role of New Technologies (Anastasiadis-Symeonidis et al., 2020), while they also emphasize on the language skills that are cultivated in the students, mainly in the lesson of Modern Greek, with the development of their linguistic culture, the development of their oral and written speech, the use of techniques, such as that of the brainstorm, and their ability to read, understand, construct and critically process multimodal texts. When it comes to interpersonal skills, teachers focus individually on the initiative and socially on social skills, such as student interaction, conflict resolution and negotiation. In systemic skills (not much emphasis), teachers identify the hierarchy of knowledge in the organization, the initiatives of students and the presentation of their output in the entrepreneurial spirit, while in leadership they detect self-discipline.

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