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Project-based learning's effect on the development of students' skills in the first grade of Senior High School.

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Abstract
The contribution of project based-learning as an assessment tool for the development of students'' skills in the first grade of Senior High School is essential. This study aimed to investigate the attitude of teachers' towards the use of the project in the educational process. The participants were secondary teachers from two school environments (one standard provincial and one exemplified High School in an urban area. The research questions were structured through observation (participant and non-participant) and were examined through ten semi-structured interviews with the teachers mentioned above. The research's empirical findings point out the positive attitude of the sampled teachers concerning the project in the school environment which connected with the positive meaning of the method, the upgrading of the educational process, the connection between the project and philological subjects, the connection between the project and modern Greek, the implementation of the project, the comparison between project and traditional teaching, the expectations about project and the skills which are fostered through the project.

Keywords: Assessment tool; education; Project; Skills; Teacher

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1. Introduction

Today's education, due to the multiple changes that take place and the need for holistic knowledge and cultivation of multiple skills, is important to be associated with authentic learning and assessment environments for students to reap the multiple benefits it offers. Charoenchai et al. (2015) emphasize that in connection with authentic learning, authentic assessment is an alternative approach to knowledge development, since, through it, multiple skills can be cultivated for both students and teachers, highlighting through their research that in Primary Education teachers do not use authentic assessment for student development, perhaps due to lack of training or their need for continuous and exclusive knowledge testing.

Nevertheless, Keinamen et al. (2018) state that to transform students' learning, it's important to change the way they are assessed, pointing out that their development, but also the emergence of innovation, could occur only through authentic processes and authentic learning environments. Furthermore, a project is a method that is primarily associated with authentic learning, through which students can develop a variety of skills and knowledge strategies. Habok & Nagy (2016) however through their research, highlighted the dominant role that teachers seek to have even within this method.

1.1. Related studies

Generally, the project has been dealt with by many researchers focusing on their characteristics. 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 other words, the project has a purpose that 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, the ability for students to perceive the consequences of their actions and to develop their creativity autonomously. The concept of reflection is at the same time one of the two aspects of the project according to Scarbrough et al. (2001), where students 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.

At the same time, Mettas & Constantinou (2007) reveal the relationship between project and problem solving (problem-solving: Dewey, 1990), which stimulates students' interest and focuses on learning through real-life aspects. Graaff & Kolmos (2003), emphasize that the project is essentially related to problem-solving since students are faced with real problems that affect their creativity (Anazifa & Djukri, 2017), while both concepts are related to the student-centered teaching model that emphasizes the student himself. Problem-solving thus offers a variety of knowledge (Snyder, 2008) developing the individual's creativity (Guilford, 1968) while, like the project, it can utilize the contribution of New Technologies in its implementation (Middleton, 2005).

Moreover, a project is linked to brainstorming, which has also been subordinated by many researchers. Osborn (1938), who was the lecturer on the brainstorming technique, emphasized that through it, students can solve a variety of problems by developing their creative expression. In addition, Kotb (2016) highlights an important element of this technique, that is, it can be creatively integrated into the context of constructivist and supportive learning, where the teacher engages students in the educational process through discussion and active participation. In addition, Al Samarraie & Hurmuzan (2018) argue that there are three types of brainstorming intertwined. More specifically, these types are the traditional, the nominal, and the electronic brainstorming, each of which contribute differently to the learning of the students, developing at the same time their personality.

At the same time, the connection between project and creativity is equally obvious, since through it, but also with the contribution of problem-solving and brainstorming, develop the creativity of students and the multiple types of intelligence, which are important during teaching to be cultivated in their entirety. In combination with the above, a project in the context of authentic learning emerges as the best method to cultivate a variety of skills in students (Guo et al. 2020). More specifically, Bell (2010) emphasizes that through the project students become more autonomous in planning and organizing their learning by acquiring collaborative skills and motivation for learning.

Musa et al. (2012) further emphasize that through this method, students acquire skills that are based on student interaction within the group, in the management of research work, and the acquisition of communicative and interpersonal strategies. At the same time, Blumenfeld et al. (1991) argue that through the project, the interest of students is stimulated, as they learn to cooperate, interact with each other, and practice solving each problem.

Subsequently, the project contributes to the subject of Modern Greek Language in Secondary education, leading to the development of multiple skills, since students interacting with real problems become aware of language use, and learn to manage speech while acquiring communicative skills (Nguyen, 2011).

1.2. Literature review

As emerged from the bibliography review and the findings of previous research, the researchers analyze important aspects of the subject under study, such as those of the project, its connection with constructivism, problem-solving, brainstorming, creativity, and its contribution to the teaching of the language, however, is identified as a lack of data 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 and the first grade of Senior High School 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 and especially in the first grade of Senior High School and b) with the cultivation of specific skills and to take into account previous research focusing on different themes.

Project is very important for education, as it is understood as a dynamic tool for approaching learning, but also for evaluating students. Moss & Van Duzer, consider that it's *a didactic approach through which learning is presented to students through the solution of problems or products that they must develop themselves* (Nguyen, 2011: 140). Thus, learning through the project is a model in which various topics are organized, which are characterized by complex questions, involving thus the student in exploratory learning and the search for solutions to everyday problems (Nguyen, 2011: 140-141).

At the same time, the implementation of the method is connected according to Fragoulis and Tsiplakides (2009: 113) with the basic pedagogical principles related to the promotion of creativity instead of memorization, the active participation of students in the learning process, but also the contact with events that are related to reality as a means of learning. 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. 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 automatically implies the acquisition of knowledge. The implementation of such actions could bring benefits over time with significant conditions and efforts, both by the teacher and the student (Ayas and Zeniuk, 2001: 62-64).

1.2.1. Project and constructivism

The project, as can be seen from the above, is inextricably linked to the learning community in which students develop effectively both cognitively and socially, broadening the horizons of their learning in an authentic environment (Splitter, 2009: 149-150), such as that of research work in which

the concept of constructivism is developed which according to Nayir, Yildirim, and Kostur (2009: 848-849), can be explained in various ways.

Initially, it is important that learning takes place in authentic educational environments, giving priority to social negotiation and the development of skills related to the learner, taking into account the prior knowledge of students. Constructivism thus as a psychological theory linked to the science of the intellect and then as a pedagogy, aims at the mental development and deep understanding of students (Fosnot, 2005: 10-11) and is considered by scholars to be the most representative of the method of a project in education, highlighting features, such as those of discovery and innovation (Bagheri, 2013: 16).

More specifically, constructivism comes from Koohang et al. (2009: 92-94), from the learning theories of Dewey (1916), Piaget (1978), and Bruner (1990), and is defined as the construction of new knowledge based on students' prior knowledge. These researchers even highlight some basic features of this theory, such as the multiple perspectives that learners receive in the learning process, the leadership role of teachers, the development of skills, the authentic complexity of data, problem-solving, the complexity of an issue, the collaborative and supportive learning and the authentic evaluation.

Constructivism is thus understood, either as cognitive or as sociocultural. Socioculturalism is, in fact, the one that is in direct correlation with a project, where 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 the social nature of knowledge and that the world is not understood individually, but collectively with emphasis on social interaction, experimentation and group negotiation (Doolittle & Hicks, 2003: 80). Regarding the students' views on collaborative teaching, the majority of them point out that they want to work in groups much more than frontal and teacher-centered teaching, while at the same time they are more willing to explore various aspects of an issue collaboratively (Lau et al., 92).

Constructivism on the other hand is considered an indicative theory of learning for distance education, offering substantial development to students with important conditions, such as achieving cooperation, intellect, and social interaction of students in technological environments (Surahman et al. 2018: 29). Thus, compared to traditional learning theories, constructivism facilitates knowledge through connection with prior knowledge, and the contribution of technology helps to lead students to deeper connections (Overbay et al., 2010: 104-105), favoring their participation in technological educational environments (Gold, 2001: 53-54).

In conclusion, the connection between constructivism and project is interrelated (Nguyen, 2011: 140-141), since in the context of knowledge building students can interact to a greater extent than in a teacher-centered teaching model, developing their critical and creative thinking, their cognitive skills, but also their communicative strategies, having at the same time the opportunity to work together to achieve their goal and solve any issue they face each time.

1.2.2. Interdisciplinarity and project

According to Habok and Nagy (2016: 3), the main feature of the project is the interdisciplinarity, through which students come into contact with different topics, moving away from traditional teaching and gaining information and important knowledge from different epistemological fields. Interdisciplinarity also in combination with the project, contributes to the development of multiple types of student intelligence according to Gardner. All these types of intelligence in the project can help students, so that everyone can develop the type or types of intelligence that he has to a greater extent or optimize one of his weak types, thus leading to his gradual development.

1.2.3. Authentic learning and evaluation through the project

The project is part of authentic learning, as it's related to the fact that students learn by doing (Dewey), while they choose the questions and activities in which they will be involved, they think about how to

approach the problem in consultation with them and their classmates and finally choose the way to reach the result produced (Blumenfeld et al. 1991: 373-376).

At the same time, the modern approach to performance assessment is linked to authentic evaluation. Authentic evaluation as a term was introduced by Archbald and Newman (1988) with most scholars considering it authentic, as it is 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) and 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).

However, several teachers do not possess the skills required for authentic assessment, while according to the research of Charoenchai, Phuseeorn, and Phengsawat (2015: 2529) as mentioned above, this assessment in Primary Education does not contribute to student development, due to the lack of training of teachers and the lack of development of their skills, to help students, develop and improve their learning. It's therefore important that teachers are properly trained and do not focus on the retrieval of knowledge and the evaluation of students' ability through memorization.

Regarding project evaluation, it's 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's important to use material handouts, interviews (Blumenfeld et al. 1991: 383) or even self-assessment and hetero-assessment sheets both among students and between students and the teacher.

1.2.4. Skills in education

The need for skills for the future of students is set as a priority, the redefinition of the aims and objectives of the educational process and the definition of the learning framework and the way of acquiring knowledge. However, to cultivate skills through teaching, it's important to create learning that favors their cultivation. So, it's important, first of all, for students to learn how to learn and develop their autonomy .

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 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 designing new systems.

At the same time, Musa et al. (567-572) through researching students, regarding the skills they acquire through a project, stressed that they learned to manage knowledge within the team, acquire communicative and interpersonal skills, and solve parallel problems. Lobczowski et al. (2021, 1-4) even point out that collaboration within the project is key, as it provides students with skills that focus on socio-emotional perspectives, such as the concepts of attention, mobilization, lack of decision-making, and problem-solving.

1.2.5. Project and problem-solving

In connection with the skills developed through complex research work, they also include problem-solving, which according to Mettas & Constantinou (2007: 80-82), is the basis of action plans, which are usually based on everyday life, leading students to exploratory learning and to find autonomous solutions to the issue or problem that arises each time.

Graaff & Kolmos (2003: 659), even emphasize that the project is by definition associated with problem-solving since based on problem-solving it becomes quite challenging for students to

develop their skills and interactivity. In fact, according to Anazifa and Djukri (2017: 354), both the project and problem-solving affect students' creativity and critical thinking, differently in the first case, but identical in the second. At the same time, both problem-solving learning and research-focused learning are based on an authentic way of learning.

1.2.6. Project and creativity

Creativity is inextricably linked to the project and as an educational term, has some specific characteristics. Its first feature is originality, which contributes to the production of something innovative. The second characteristic of creativity is its social dimension and its connection with social reality. In other words, creativity can be the starting point of a social event or a problem, and based on that it can develop to face what has arisen. The third characteristic of creativity is that it cannot be achieved individually, but instead needs the help of other people. This means that it is influenced by the knowledge of others, who are often experts in various subjects. This process may also include techniques, methods, codes, or symbols (Henriksen, Mishra, Fisser: 2016, 29).

We conclude, therefore, that creativity helps students in the production of original ideas concerning society, while it is not realized on an individual, but on a social level where knowledge intersects with other areas.

1.2.7. Modern Greek Language and project

More specifically, in terms of the connection between project and language, this method allows students through the variety of activities they come in contact with, to develop multiple skills related to its cultivation and the development of skills (Nguyen, 2011: 141). This is achieved by the fact that the project is part of authentic learning, through which students through problem-solving, collaboration with their classmates, and multiple perspectives inadvertently develop their language skills (Fragoulis, 2009: 114).

Ismuwardani et al. (2019: 52-56), through their research, concluded, that the project contributes to the development of students' language skills and specifically to the writing of poems, pointing out that the creativity of students develops significantly. At the same time, Habok and Nagy (2016: 4-5), pointed out that the project facilitates the acquisition of language skills even for students of low language level, who through empirical learning develop cognitive and metacognitive, acquiring important skills even in verbal speech. The project can benefit students at the high school level in many ways, especially in issues such as the relationship of the individual with his place and culture, where it enables them to cultivate their language sense and mobilize their interest concerning their daily lives, as a whole which interacts with their culture, society, and sciences.

Kessler (2017: 209-210) also highlights digital projects through which students come into contact with online sites, movies, or blogs for holistic language education. However, digital tools and a variety of software must be used carefully to achieve the desired result. It is therefore important that digital tools are used with caution and only when they have the potential to benefit students significantly and to a large extent, to avoid their involvement in interacting with their classmates on a topic.

1.3. Purpose and aims of the study

The purpose of this research is to investigate how (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 a 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 projects within the school community as a tool for 21st-century skills development.

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, 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.

1.3.1. 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 to evaluate and evaluate the complex research work in real-time. So, the research questions are:

1. What is the attitude of 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?

2. Materials and Methods

2.1. Method of analysis

The type of research chosen to investigate the central issue is a qualitative research which defers from the quantitative. More specifically, the principles of grounded theory were followed, where the data were collected from teacher interviews and analyzed based on the central phenomenon to conclude (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.

2.2. Procedure and data collection instrument

The present survey was conducted during the first and second semesters 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 a project. During the observation in the school context of a Model school of Attica and a General provincial school, the observation of both students and teachers was used 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, 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 General (provincial public school outside Athens) and Exemplify High 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 impediments) 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 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 to have data cross-checking and ensure validity. After the interviews, the data were organized and coded through thematic analysis to approach the research issue. Finally, at all stages of the investigation, the consent and anonymity of all involved were ensured.

The following questions focus on the two research questions. The first research question as noted above concerns the attitude of teachers towards project use and is structured in seven sub-themes, where the first focuses on the conceptualization of the project by teachers, the second on their attitude regarding how the project upgrades the educational process and in what ways. The third sub-theme focuses on the connection between the project and philological science, while the fourth focuses on the project and its connection with the Modern Greek language. The fifth theme concerns the way the teachers implement the project and focuses on the choice of project topics, the goals, and motivations of the teachers, the implementation stages, and the possible problems that arise from its school use. The sixth theme focuses on the relationship between a project and traditional teaching, while the seventh focuses on teachers' expectations regarding the project in the educational process as a whole.

The second research question regarding the views of teachers concerning the skills that students acquire from the use of projects in the Modern Greek language course is structured in two main thematic areas, where the first includes the results of the project which include skills, while the second is the categorization of the skills from which the teachers highlight mainly the instrumental and the interpersonal ones.

2.3. Participants

The sample includes ten teachers (five Standard and five General Senior High School) who have opposite characteristics in terms of their level of studies, but also their teaching experience. It turns out that the teachers of the Exemplify School have from one to two postgraduate degrees, while two of them have a Ph.D. On the other hand, most of the teachers of the General Senior High School have a master's degree (except for one), while none of them has a doctorate.

There is a strong difference between the two schools in the teaching experience of teachers, where the teachers of the Exemplify Senior High School have experience ranging around 15 years (except for one teacher with 33 years of experience), while the teachers of the General Senior High School have teaching experience ranging around 35 years (except for a teacher with 15 years of experience).

Table 1

Level of studies and teaching experience of General and Experimental Lyceum teachers

General Activity	Theme-Variable	Teachers of Senior High School									
		Exemplify					General				
		1	2	3	6	10	4	5	7	8	9
Level of education											
	2nd Degree						√				√
	1st Master		√	√	√	√		√	√	√	
	2nd Master	√					√				
	PhD			√	√	√					
Teaching experience											
	1-10 years of experience										
	11-20 years of experience	√	√	√		√	√				
	>21 years of experience				√			√	√	√	√

3. Results

1st research question: Teachers' attitude towards the use of the project during the educational process

3.1. Project conceptualization

Regarding the conceptualization of the project by the teachers, many describe it as a closed concept in direct connection with the concept of objectives, thus referring to the positivist example and the normative form of teaching. According to Ayas & Zeniuk (2001: 64 & 70) one of the main characteristics of the project may be the sense of purpose and small goals to implement a plan, however, these goals do not follow the positivist concept. However, the majority of teachers define the project as a research project, action plan, creative project, or method, while at the same time highlighting important features of it such as exploratory learning (Nguyen, 2011: 140), the discovery method, and its connection with creativity, research, collaborative learning and multiple types of intelligence.

Table 2

Conceptualization of project according to the teachers

General category	Theme-Variable	Teachers of Senior High School									
		Exemplify					General				
		1	2	3	6	10	4	5	7	8	9
Research question 1: Teachers' attitude towards the use of the project during the educational process											
	Conceptualization of project										
	As closed meaning				√		√				
	aims as a basic element					√			√		
	Can be connected with other methods									√	
	As a research study			√					√	√	
	With a connection to research	√		√				√	√	√	
	As teaching method					√					
	As work plan							√			
	As action plan									√	
	In association with exploratory learning			√						√	
	In association with discovery learning	√									
	In connection with creativity		√	√				√			√
	In connection with problem-based learning	√									
	In association with initiation						√				
	In connection with the multiple types of intelligence				√						
	In association with collaborative learning		√	√	√	√		√			
	In connection with the teacher as a guide										√
	Can be implemented by one student							√			

3.2. Attitude of teachers towards upgrading the educational process using a project

The upgrade of the educational process concerns the teacher in general, the use of the school textbook that is considered obsolete by some teachers, but also in the context of teaching and the student in particular. It also refers to the processes achieved through the project in terms of the knowledge approach, the results that are focused mainly on students, and also the views around the educational process in general. With regard to the textbook, it is emphasized that the knowledge contained in it is outdated and that is why it is important to adopt a more effective learning method. As for the role of the teacher, it ceases to be an authority and is called not to impart knowledge to students but to provide them with opportunities for learning by giving them the necessary information through supportive learning, encouraging them, and evaluating them as a whole for the result

produced. The teacher thus moving away from his central role in the educational process, through the project acquires a more critical role that contributes more substantially to learning (Blumenfeld et al., 1991: 380-381). Along with the role of the teacher, the role of the students' changes and he becomes the protagonist, being the producer of his knowledge, but also the center of the educational process (Bagheri et all, 2013: 18).

Table 3

Attitudes of teachers towards upgrading the educational process using a project

General category	Theme-Variable	Teachers of Senior High School									
		Exemplify					General				
		1	2	3	6	10	4	5	7	8	9
Research question 1: Teachers' attitude towards the use of the project during the educational process											
	The attitude of teachers towards upgrading the educational process using a project										
	Contribution of the project to the upgrading of the school textbook	√									
	Removal of the teacher from his role of authority								√		
	Activating of students	√			√	√		√		√	√
	Promoting in students research	√	√					√			
	Autonomous student learning			√							
	Experiential learning				√			√			
	Skills development			√				√		√	
	Creativity development				√						
	Connection of project and multicultural society							√			

3.3. Connection of project and philological courses

As the teachers point out, the project could be linked to all the philological courses in both the Junior and Senior High School (Junior High School is mainly underlined by teachers 4 and 5), while some teachers point out a more direct connection between the project with some philological lessons. For example, the connection of the project with the course of History (teach.1, 2, 9, 10), Ancient Greek (teach.1, 6 and 9), Literature (6 and 10), and Modern Greek (1, 2 and 9, 10).

In the lesson on Modern Greek Language, the greatest interest of the students is detected by teacher 9. The use of the project is pointed out by the teachers, however, in non-philological courses, thus emphasizing the interdisciplinarity that characterizes this method. According to Habok and Nagy (2016: 3), interdisciplinarity is, in fact, the main feature of a project through which students come into contact with different epistemological fields acquiring global knowledge and comprehensive development.

Table 4

Teachers' views on the connection between the project and philological science

Theme-Variable	Teachers of Senior High School

General category		Exemplify					General				
		1	2	3	6	10	4	5	7	8	9
Research question 1: Teachers' attitude towards the use of the project during the educational process											
	Connection of project and philological courses										
	Connection of project with the course of Modern Greek Language	√	√			√					√
	Connection of project with History	√	√			√					√
	Connection of project with Ancient Greek Literature	√			√						√
	Connection of project with Literature				√	√					
	Greater interest of the students in the lesson on the Modern Greek Language										√
	Promoting students' interest in philological courses	√									
	Project as an in-depth method for the philological science		√						√		
	Use of projects and in non-philological courses	√									
	interdisciplinarity and project	√			√	√				√	

3.4. Project and Modern Greek Language

The teachers highlight the connection of the project with the Modern Greek Language, especially in Secondary education. This connection is first of all highlighted by the fact that all the teachers have implemented projects in the Modern Greek Language course. Most of them have even focused on the first grade Senior High School, while there are also these teachers who have used it in the second and third grades. It is noteworthy that all teachers have implemented and continue to implement projects in the educational process autonomously (except teacher 2), considering that the benefits it offers to students make it go beyond the limits of its obligation. as a course. Thus, while the project has been included since 2011 in the schedule of the General and Professional High School as a compulsory course which was later renamed to creative work and abolished in 2018, however, they continue to use it in the learning process.

Table 5

Connection of project and Modern Greek Language

General category	Theme-Variable	Teachers of Senior High School									
		Exemplify					General				
		1	2	3	6	10	4	5	7	8	9
Research question 1: Teachers' attitude towards the use of the project during the educational process											
	Project and Modern Greek Language										
	Implementation of the	√	√	√	√	√	√	√	√	√	√

	project in the course of Modern Greek Language											
	Connection of project with basic concepts							√				
	Project connection with interdisciplinarity							√				
	Pursuit of project implantation in the course of Modern Greek Language			√	√	√	√	√	√	√	√	
	Teachers' reluctance in the implementation of a project in the Modern Greek Language Course	√	√									

3.5. Attitude of teachers towards the implementation of the project

The implementation of the project in the Modern Greek Language course is related to the criteria chosen by the teachers, the project topics, the way of implementation (in stages or not), the motivations, the goals they set, but also the problems that arose from its use (e.g., lack of time, material, inability to form groups).

Table 6

Teachers' attitudes towards the implementation and goals of the project

General category	Theme-Variable	Teachers of Senior High School									
		Exemplify					General				
		1	2	3	6	10	4	5	7	8	9
Research question 1: Teachers' attitude towards the use of the project during the educational process											
	Teachers' attitudes towards the implementation and goals of the project										
	Selections of topic projects by teachers	√	√	√	√	√					√
	Selections of topic projects by students						√	√	√	√	
	Project implementation in stages		√	√	√			√		√	√
	Awareness of students		√								
	Student collaboration	√	√	√			√	√		√	√
	Development of digital literacy			√							

Skills development (critical thinking, initiative)			√			
Learning to use technology			√			
Search for information from students			√	√		
Activation of students	√				√	
Presentation of the result				√		

3.6. Attitudes of teachers towards project use compared to traditional teaching

Regarding the views of teachers on the project method compared to traditional teaching, analogies are first detected in the way teachers define traditional teaching since most describe it as frontal teaching, which draws from the teacher-centered model and refers to the role teacher as an authority, with students acting as passive recipients of the process. The majority of teachers thus 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 interested in the learning process to the maximum extent. There is thus a general change on the part of teachers who are even willing to give space to students to express their views and participate more actively in the classroom.

The change, however, occurs in the students themselves with the teachers to detect in the teaching using project compared to the traditional - frontal teaching important elements, such as the activation of the students, an element that is emphasized by the teachers. From the above and from the views of teachers compared to traditional teaching and teaching using a project, it follows, that in theory, many teachers may seem open to new methods, however, there are still teachers who are distinguished by hesitation in these methods, without to give them space for more testing as part of the educational process. In this way, common elements are detected in the phase of *Kuhn's extraordinary science* (Arjun, 1998: 21-22) where there is confusion between the communities of researchers and teachers and the decisions of those responsible for the textbooks, the Curriculum. Also contributing to this, are the decisions of the educational policy in general. 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).

However, concerning traditional teaching and traditional communities that focus on knowledge transfer, it is important to emphasize that they do not have long-term effects, nor do they lead students to autonomy and skills development. At the same time, this kind of teaching does not meet the requirements of teaching as set by Festenmacher (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 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.

Table 7

Teachers' views on the role of the student in teaching using a project compared to traditional teaching

General category	Theme-Variable	Teachers of Senior High School									
		Exemplify					General				
		1	2	3	6	10	4	5	7	8	9
Research question 1: Teachers' attitude towards the use of the project during the educational process											

Student activation	√	√					√	√		
Activation of hesitant/inactive/weak students	√	√		√	√	√				
Presentation of the result of the students			√		√				√	√
Student interaction in groups	√	√					√	√		√
Responsibility of students								√	√	
Creativity of students									√	
Preference for a traditional method	√			√						

3.7. Teachers' expectations regarding the project in the educational process

Regarding the teachers' answers to the researcher's question about the future use of the project in the educational process and the expectations they have about this method, all teachers argue that it's necessary to continue, with the majority emphasizing that, it's important to continue not as a compulsory course, but as a teaching method.

This is because, as they claim, it is important not to be considered as a course just to supplement the teachers' schedule, but to be an integral part of the educational process. Also, if it is introduced as a compulsory subject in Secondary education, it may be deprived of the freedom it gives to the trainees. Teachers 2, 4, 7, and 10 on the other hand argue that the project is important to continue in the educational process as a compulsory subject, considering that in this way the results will be more noticeable. However, all teachers emphasize the importance of the project in the educational process

Table 8

Teachers' expectations regarding the project in the educational process

General category	Theme-Variable	Teachers of Senior High School									
		Exemplify					General				
		1	2	3	6	10	4	5	7	8	9
Research question 1: Teachers' attitude towards the use of the project during the educational process											
	Teachers' expectations regarding the project in the educational process										
	Introduction of the project in school as a non-compulsory course			√	√					√	√
	Introduction of the project in school as a compulsory course		√			√	√		√		
	Wrong the abolition of the project as a compulsory course								√		

3.8. 2nd 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.

3.8.1. Instrumental skills

In terms of instrumental skills, these include cognitive, methodological, technological, and linguistic. 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 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 the cultivation of critical thinking that makes students have critical knowledge of things (critical literacy) and not be inconspicuous recipients of any knowledge that may be arbitrarily displayed to them (teachers 4, 5, 9, and 10). Simultaneously with critical thinking, the creative one is emphasized, which enables the students to move away from the narrow context of the lesson and to broaden their perspective mainly through interdisciplinarity.

Table 9

Development of cognitive skills in students through the project

General category	Theme-Variable	Teachers of Senior High School									
		Exemplify				General					
		1	2	3	6	10	4	5	7	8	9
Research question 2: Teachers' views regarding the skills that students acquire from the use of the project in the Modern Greek Language lesson.											
	Types of skills										
	Instrumental skills-Cognitive										
	Learn how to learn	√								√	
	Cultivation of critical thinking					√	√	√			√
	Creativity							√			

In terms of methodological skills, the students' motivation in research and the use of methodology stand out primarily from teachers 3, 7, and 10. The importance of research is an important component of the project where students are involved in the research process and as researchers collect data, analyze it and make judgments (Blumenfeld et al. 1991: 371).

At the same time, an additional methodological skill noted by teachers 1 and 5 is the problem-solving skill that is directly related to the project. According to Mettas & Constantinou (2007: 80-82), problem-solving is directly related to the project which by definition involves the involvement of students in authentic problems with which they come in contact trying to solve them exploratory. At the same time, Graaff & Kolmos (2003: 659), emphasize that the combination of project and problem solving stimulate the interest of students, so that they become more interested in themselves and get involved in the process, thus developing a variety of skills. In fact, according to Anazifa and Djukri (2017: 354), both the project and problem-solving are related to the creativity of students by completing them multiple times.

Table 10

Instrumental Skills-Methodological

General category	Theme-Variable	Teachers of Senior High School									
		Exemplify				General					
		1	2	3	6	10	4	5	7	8	9
Research question 2: Teachers' views regarding the skills that students acquire from the use of the project in the Modern Greek Language lesson.											
	Types of skills										

Instrumental skills-Methodological									
Promoting students in research		√		√				√	
Use of methodology		√		√				√	
Cultivation of abstract capacity								√	
Hierarchy of knowledge	√							√	
Problem-solving skills	√						√		
Observation						√		√	

The following are the technological skills from which the digital ones stand out, as observed by teachers 2, 3, 6, and 9. The connection between project and ICT is also highlighted by scholars who believe that the integration of the project in the educational process leads students in the development of self-guided learning skills enabling them to overcome pedagogical challenges (Bagheri et al. 2013, 25-26).

Table 11

Instrumental Skills-Technological

General category	Theme-Variable	Teachers of Senior High School									
		Exemplify					General				
		1	2	3	6	10	4	5	7	8	9
Research question 2: Teachers' views regarding the skills that students acquire from the use of the project in the Modern Greek Language lesson.											
	Types of skills										
	Instrumental skills-Technological										
	Importance of New Technologies		√								
	Supporting the role of technology in learning										√
	Acquiring positive emotions in students through the use of digital tools										√

A very important category of skills is also the language ones, where to the question of the researcher if through the project in the course of Modern Greek Language in the High School the language culture of the students is developed and the ten teachers answer positively. More specifically, language skills concern both oral and written speech. Concerning written speech (ex. 1, 2, 5, and 9), students develop skills around composing and producing written text.

Reference to the cultivation of oral speech in the context of the project in the course of Modern Greek is made by most teachers, who focus particularly on the presentations prepared by students to be evaluated through the use of this method and the discussions that take place between them regarding the respective issue. But in addition to cultivating oral and written language, teachers detect other important components associated with language skills.

Thus, the brainstorming technique that takes place in the first stage of the project is highlighted, where the teacher and the students discuss to reach the topic of discussion. The connection between brainstorming and project has been highlighted by several scholars, such as Bonnardel and Didier (2020: 3-4), who points out that projects have more positive results when combined with brainstorming. Also, both brainstorming and the project (Ismuradani, Nuryatin & Doyin, 2019: 56) are associated with the cultivation of written and oral speech, as highlighted above by teachers, thus contributing in combination to the development of language skills. It is also important

to read and understand texts that are achieved through the project, allowing students to first understand the text, before proceeding to formulate oral or written speech.

Table 12

Development of language skills in students through the project

General category	Theme-Variable	Teachers of Senior High School									
		Exemplify					General				
		1	2	3	6	10	4	5	7	8	9
Research question 2: Teachers' views regarding the skills that students acquire from the use of the project in the Modern Greek Language lesson.											
	Types of skills										
	Instrumental skills-Linguistic										
	Development of students' language	√	√	√	√	√	√	√	√	√	√
	Contribution to the development of students' written speech	√	√					√			√
	Contribution to the development of students' oral speech	√		√		√	√	√			√
	Use of brainstorming technique								√		
	Reading and understanding texts		√	√	√		√	√	√		
	Text construction by students									√	
	Critical word processing from students							√		√	
	Contact with multimodal texts				√						

3.8.2. Interpersonal skills

In terms of interpersonal skills, except for one teacher referring 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. From the above, it becomes clear that the social skills that are cultivated within the project are necessary for the educational process.

In fact, according to Lobczowski et al. (2021: 1), collaboration is the most important skill of the twenty-first century for students, as it is considered necessary both for the interaction and involvement of students within the school community and for the integration of individuals into society within of their adult life. In collaborative learning environments, students can come into contact with a variety of perspectives, develop relationships and improve the way they work within groups, achieving greater engagement. 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).

Table 13

Development of interpersonal skills in students through the project

General category	Theme-Variable	Teachers of Senior High School									
		Exemplify					General				
		1	2	3	6	10	4	5	7	8	9
Research question 2: Teachers' views regarding the skills that students acquire from the use of the project in the Modern Greek Language lesson.											
	Types of skills Interpersonal skills-Individual-Social										
	Individual skills									√	
	Social skills	√	√		√	√		√	√	√	
	Student interaction	√	√		√	√		√	√	√	
	Conflict resolution	√									
	Negotiations	√									

3.8.3. Systemic skills

Finally, according to Deusto's model, systemic skills follow (Table 17) which were not given much emphasis by teachers, as they focused more on the first two categories of skills (cognitive and methodological). However, concerning this type of skill, teachers focus both on the organization in the sense of prioritizing knowledge, as well as on the entrepreneurial spirit with the initiatives taken by students and on its presentation produced result that follows at the end. The initiative emerges as an important element for researchers both individually and socially within the project (Habok & Nagy, 2016: 3). As far as leadership is concerned, it is connected by the teachers with self-discipline, an element with which the students come in contact within the project.

Table 14

Development of systemic skills in students through the project

General category	Theme-Variable	Teachers of Senior High School									
		Exemplify					General				
		1	2	3	6	10	4	5	7	8	9
Research question 2: Teachers' views regarding the skills that students acquire from the use of the project in the course of Modern Greek Language.											
	Types of skills **Systemic skills**										
	Hierarchy of knowledge				√						
	Student entrepreneurship (initiatives)							√			
	Presentation of the produced result	√									
	Student self-discipline							√			

It becomes clear that all teachers, regardless of the attitude they may have towards the use of the method in general in school, recognize the skills that are cultivated in students through the project. So maybe the cautious attitude that some teachers have regarding the future use of the project mainly, which often pushes them to prefer this method in theory and not in practice is a result, or because they are not so familiar with the implementation due to their little teaching experience (Habok & Nagy, 2016) thus preferring the traditional teaching, or due to the rooted pedagogical routines that lead the latent formulated theory in conflict with a new one. The element of inconsistency in theory and practice has already emerged from empirical research which pointed out

that people often find it difficult to put into practice something in which they are theoretically positive. The evaluation of behaviors and beliefs is based on the designed behavior with three key factors (favorable or unfavorable evaluation of behavior, social pressure to perform or not an action, and self-efficacy) which influence people to lead to a behavior.

However, the cultivation of skills in the project is emphasized by many scholars considering it as one of the key elements of the project (Habok & Nagy, 2016: 4), as it provides students with important knowledge and practices such as those of reflection and organization (Ayas & Zeniuk, 2001: 63). Skills are thus very important to be promoted through new methods such as the project, while modern learning environments are required to build knowledge together with students, achieve the interdisciplinary approach, and enable teachers to abandon their familiar routines by trying new techniques and methods to upgrade the school community.

4. Discussion

Regarding the attitude of teachers towards the use of the project, most of the teachers 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 in it many positive data. The teachers in terms of the concept of the project seem knowledgeable of the method while emphasizing that it contributes many times 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 on the Modern Greek Language is highlighted, while the implementation of the method focuses on goals and motivations centered on the student himself. In addition, the differentiation of the project from the traditional teaching and the expectations of the teachers regarding the introduction of the project in the educational process is highlighted as a method and not as a compulsory course that deprives the students of their freedom.

At the same time, 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 instrumental cognitive skills, the teachers point out the skill of learning how to learn and the cultivation of critical and creative thinking. Regarding instrumental methodological skills, teachers focus on student research (Blumenfeld et al. 1991), the use of methodology, the cultivation of abstract ability, the prioritization of knowledge, and problem-solving skills (Mettas & Constantinou 2007), and observation.

In the tool instrumental skills, the teachers emphasize the role of New Technologies and the handling of digital tools by the students, while they emphasize 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, critically process and 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, teachers identify in the organization the hierarchy of knowledge, in the entrepreneurial spirit the initiatives of students and the presentation of their output, while in leadership they detect self-discipline.

And while the attitude of teachers towards the use of the project is positive with important skills that are cultivated within it, however, from the present research, some further conclusions emerged which, however, do not deviate from the initial searches of the researcher and follow below.

4.1. Alternative learning or adherence to traditional teaching?

Some of the teachers remain attached to traditional teaching to have control of the classroom. The reasons that lead teachers to such practices and are highlighted by the present research are three:

- The little teaching experience of young teachers discourages them from using alternative forms of assessment and teaching, leading them to conventional forms, such as frontal teaching (Habok & Nagy 2018) or monologue to have control over the learning process.
- The conflict between theory and practice is also highlighted by scholars (Yang, 2008: 1569-1570). Although in this way, teachers know theoretically what the project is and recognize its positive results through its implementation, nevertheless some prefer the traditional teaching in practice, perhaps because they have adopted an informally formulated theory (in this case about the project)consistent with their perceptions and experiences in the classroom and the inability or unwillingness to apply the method in practice is the result of a conflict between the informal theory expressed by teachers and the theory of a new method submit the Curricula.
- The intentions of teachers who are often "trapped" in their pedagogical routines and do not allow themselves to renounce such practices by adopting new methods that are consistent with modern teaching. According to Frydaki & Katsarou (2013), these routines can push teachers to save energy by making them act according to the internalized image they have within them of the role of the teacher according to their own experience, but they do not lead the teachers in search of a dominant rather than a guiding role in teaching.

So, the combination of all three of these components often prevents teachers from putting into practice something they know theoretically, leading them to outdated practices that do not upgrade the educational process, nor develop students' skills, which are essential in the project. both from the point of view of teachers and the research of scholars (Habok & Nagy, 2016; Ayas & Zeniuk, 2001).

Skills are thus very important to be promoted through new methods, such as the project, while modern learning environments are required to build knowledge together with students, achieve the interdisciplinary approach and enable teachers to abandon their familiar routines by trying new techniques and methods to upgrade the school community.

4.2. Professional development of the teacher or his / her dominant role in teaching?

The data obtained through the observation of the teachings in the research and through the semi-structured interviews with the teachers also highlighted how the change can occur in the teachers regarding their entrenched perceptions about the alternative forms of learning and evaluation. While most teachers are distinguished by a positive attitude towards the project, however, their belief finds this as an obstacle, either the lack of adequate training and teaching time, the constant changes by the competent bodies, or the need to cover the curriculum in the examination center.

Some teachers considered that they significantly influence their students, while the students themselves do not seem to prefer the dominant role of teachers . Therefore, to upgrade the educational process, the teachers themselves must want their self-improvement and professional development. To achieve this, however, it is important for them to make a conceptual change and to understand for themselves the good practices that could be more beneficial to students about their ingrained perceptions, which may no longer be consistent with their interests. From the above, it is understood that it is important to turn teaching into a learning process by highlighting the central role of the student in the learning process and the multiple perspectives that develop him as a whole (Frydaki & Mamoura, 2008: 1498).

After all, teaching is a complex concept that intertwines important components and it is important to keep pace with authentic learning environments, in which the project could be used, either as a teaching method or as a form of alternative assessment (Constantinou, 2017), leading

students to methodical forms of action, knowledge exploration and their involvement in the management of real situations.

5. Conclusion

The ultimate goal of the present research is the investigation of the action plan as a dynamic tool for the development of skills in high school students and the investigation of the attitude of teachers regarding the utilization of the project in the educational process and their views concerning skills. cultivated by students in the context of the method, to highlight the importance of utilizing complex research work and the significant learning benefits and prospects for both students and teachers.

Through research work, students can act as researchers by independently investigating an issue, taking initiative, and evaluating both the material and themselves (self-assessment), their classmates, and teachers (hetero-assessment), while teachers can assist students' knowledge, to act as a guide, to organize and evaluate knowledge by giving space to students, to apply a variety of strategies and techniques by teaching students how to learn. To enhance the usefulness of the project in the educational process and to draw more conclusions taking into account the limitations of this qualitative research, it is proposed to extend the research nationwide with more teachers and more schools, so that the resulting sample is larger including and students' views on this method, thus providing more data and greater security to the researcher.

In conclusion, the above are only partially research proposals that could feed scholars for further educational research, which may be related to either individual research interests or educational issues that constantly emerge from the educational reality, such as the didactic use of the project to students with special learning characteristics or needs. In conclusion, how this work can be read and interpreted is not limited, but remains open to every reader and their scientific interests and assumptions.

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