Quest Journals
Journal of Research in Humanities and Social Science
Volume 9 ~ Issue 4 (2021)pp: 41-51
ISSN(Online):2321-9467
www.questjournals.org

Research Paper

Integration of Knowledge in textbooks: the case of five taught subjects in Greek Junior High School

Florentia Antoniou
[1] *Department of Philosophy and Education, Auth, Greece*

ABSTRACT: *This article describes the analysis and findings of an archival research on Greek Curricula and their accompanied educational material in use. The study focuses on how six different taught subjects in Greek Junior Hight School are connected, and b) between which of the researched subjects, connections are more frequent. The archival research material was analyzed with Qualitative Content Analysis method and the findings show that integration is not the basis for organizing either the examined curricula or their accompanied educational material. Moreover, the connections between the taught subjects are rare, superficial and they do not enhance integration of knowledge.*
KEYWORDS: *Integration, textbooks, curriculum, integrated curricula*

Received 29 Mar, 2021; Revised: 10 Apr, 2021; Accepted 12 Apr, 2021 *© The author(s) 2021. Published with open access at* www.questjournals.org

I. INTRODUCTION

The last decade of the 20th century, the rapid developments caused by globalization and invasion of Information and Communication Technologies in all areas of human activity cast doubt on the well-established for years traditional and behavioral model of curricula [1]. Consequently, new educational practices were developed in many educational systems internationally, which were based on the Constructive Learning Theory [2], the basic principles of which are the holistic approach of knowledge and the involvement of students in its production processes [3]. These principles and pedagogical practices of Constructivism are implemented through the development of Process Curriculum that emphasize on the learning process and, on the integration of knowledge [4]. The most well-known examples of such curricula are the Integrated. These curricula are developed in an authentic learning environment, in which students "learn how to learn", they participate in teaching, they build knowledge, competencies and skills empirically, collaboratively, and they acquire critical ability. Teacher, also, take on a new role, this of the assistant, partner, and facilitator in the learning process [5].

In international literature, Integrated Curricula often appear with different but interrelated terms and with various forms that can, however, also be related to each other. All different terms used for Integrated Curricula try to describe either their form or their purpose and quite often they coincided or overlapped with each other. For this reason, the international literature has not come up yet with a common terminology for Integrated Curricula. However, the most common term used is "Integrated Curriculum", which describes all the curricula in which learning activities are organized, mainly, with the criterion that they facilitate students' self-action and self-education, and they do not set strict boundaries between taught subjects [6] and [7]. Other terms that refer to the different forms of an Integrated Curriculum are: "inter-disciplinary curriculum", "thematic curriculum", "topic-based curriculum", "integrated themes", "cross-curricular themes", "problem-centered curriculum" [8]. Similarly, although in the international literature the proposed integration models vary, such as that of Fogarty [9] and more recently Drake [10], we can distinguish, based on the degree of integration that they promote, two main categories of Integrated Curricula: *Interdisciplinary Curricula* and *Them-based/Cross-thematic Curricula*.

The theoretical base of an Integrated Curriculum goes back to the Progressive Education movement in early 20th century [11]. This movement put the foundations for the pedagogical theory of the Integrated Curriculum through the work of educators such as Dewey [12] and Kilpatrick. Equally important in the development of Integrated Curricula was the contribution of Constructivist Learning Theory. Constructivism was based on the concept of Morphological theory, that learning is promoted through the correlations of the parts and the holistic considerations of sets. The application of the above positions in the didactic practice led to the development of experiential, holistic and collective approaches to teaching and learning [13].

In addition, both recent research in Cognitive Psychology and Neurophysiology and socio-economic developments have increasingly advocated the application of methods that promote exploratory and discovery learning, as well as the active participation of students in learning process. As a result, international pedagogical approaches, and teaching methodologies, such as project method, scientific method, etc., were re-introduced or re-appeared to pedagogical practice [14]

Finally, the influence of Postmodernism was noteworthy, according to which the connection of phenomena, the analysis of their meaning, the use of dialogue as a means of democratization, as well as the interaction of teachers and students must be a priority in education and in learning. In addition, Postmodernism emphasized the control of learning by students themselves, so that they become capable to understand not only "what" they learn but also "how" they learn [15].

The above theoretical concerns about the study and exploration of the principles that should govern Curricula became more pronounced at the beginning of the 21st century and led many governments to revise or even design new curricula in which several initiatives were taken to promote integration into them [16]. Initially, in Europe**,** globalization and the new challenges posed by the " knowledge society " [17] and [18] and economic competition with the United States and Asia (China and Japan) led to the development of common strategies for economic empowerment. In European countries, more emphasis was placed on the formulation of a common education policy of their member states, because education was considered the vehicle for meeting the new socio-economic needs [19]. To do this, among other things, it was deemed necessary to formulate Curricula that would approach knowledge holistically and would introduce modern teaching methods and tools, so that students can play an active role in acquiring knowledge, taking initiatives and to acquire skills and competencies necessary for their integration into a constantly changing society [20]. In the context of this effort, various initiatives were developed by European Union, by agencies such as C.I.D.R.E.E. (Consortium of Institutions for Development and Research in Education in Europe) or through the education systems of the European Member States [21] and [22].

Today, in many countries worldwide integration of knowledge has been introduced in the curricula as an alternative form of approach to knowledge either in the form of independent-open curricula that work in parallel with the subject-based curricula or in the form of projects implemented within the subject-based curriculum and they often require modification of the school time schedule in various ways for their implementation. Respectively, in Greece since 2003 the Integrated Curricula (DEPPS) are applied in parallel with subject-based curricula (APS) (Government Gazette 303 & 304). DEPPS introduced for the first time the integration as a form of organization of school knowledge in Greek Compulsory Education [23].

Regarding the design framework of new curricula, the decision of Greek government and the Ministry of Education was to proceed with the process of design and production of new curricula, which were then accompanied by new textbooks and educational software. New curricula for each taught subject in obligatory education (elementary and junior high school) were produced. For each subject, an Integrated Curriculum (DEPPS) and a Subject-based Curriculum (APS) was designed [24]. In DEPPS alternative propositions of integration were appeared for the first time. The integration can be achieved either through connections between the taught subjects (interdisciplinarity) or by thematic projects in which themes can be explored and investigated without the obligatory involvement of the different taught subjects (cross-thematic approach) [25] and [26] In particular, in D.E.P.P.S. the integration is carried out mainly with:

A) The interdisciplinary connections between the subjects. Interdisciplinary links take place through eight cross-thematic concepts: *system, interaction, change, space, time, individual-whole, similarity-difference, culture.* Each concept can be examined through the different teaching subjects and therefore in the light of different disciplines

B) The theme-centered approach. his approach emphasizes the selection and study of topics that may arise either from themes or problems examined in the separated taught subjects or from the cross-thematic concepts. For this approach teacher should design a project and he/she can either use the Flexible Zone or the 10% of the total teaching time for his/her subject [27].

Based on the above curricula new textbooks were written for each taught subject. New textbooks were evaluated and approved by competent committees, then they were piloted for one school year and were finally issued in 2006 and they were published by private printing houses. Regarding integration, writers should include either in texts or in the activities of the textbooks cross-thematic concepts and cross-thematic activities. Parallel to textbooks digital educational software was also produced in the framework of the new curricula published. Pedagogical Institute and private publishers were responsible to produce the software packages were. The same instructions about integration were given for the creation of the digital material as well as those for the textbooks. Finally, for each educational software, a technical control team was formed, which consisted of a member of the Pedagogical Institute and a low Secondary Education teacher [28].

The above-described educational material: Curricula, textbooks and digital software are still in use in Greek obligatory education.

Concerning research, mainly in the USA and quite often and in some European countries many surveys had been conducted and continue to be carried out on Integrated Curricula at all levels of education. Summarizing the results of research in both Europe and the USA [29], [30] and [31] we would say that most of them reveal the positive effect of Integrated Curricula for all participants (students, teachers and ect.) if:

- the integrated curriculum helps students to acquire a variety of skills.
- integrated knowledge leads to faster information retrieval.
- integrated curriculum encourages the depth and breadth of learning.
- integrated curriculum enhances the positive behavior of students.
- integrated curriculum provides better quality teaching and learning.

In Greece, unfortunately, the number of research projects concerning a) the new Curricula (DEPPS) and their accompanied educational material (textbooks, software, teachers' guides), b) the application and the results of interdisciplinarity or cross thematic practices in teaching is much smaller and is mostly related to the application and effectiveness of cross thematic projects in Kindergarten and in Elementary School. On the contrary, the number of similar surveys for High School is minimal. In addition, very little research focuses on the production process of Curricula, textbooks and the educational software and the factors that influenced it. Finally, there is no research either on the experiences and views of teachers, students and parents on the integrated practices that the new Curricula and their accompanied educational material tried to introduce or on the connections between taught subjects through textbooks and educational software [32].

III. THE STUDY

This study examines: a) if and how the different taught subjects in Greek Junior Hight School are connected, and b) between which taught subjects connections are attempted. As research material were used the *Curricula* and *textbooks* of six basic taught subjects in Greek Junior High School (Philosophy, Literature, Ancient Greek language, Modern Greek language, Ancient Greek Literature and History) as well as their accompanying *educational software* and *guides for teachers*. The research material was analyzed using a descriptive-interpretive model **of Qualitative Content Analysis** [33] and [34]. More precisely:

1) First, I analyzed the material using "*Structuring"* of Qualitative Content Analysis, with which I described the content of the research material paraphrasing it.

2) Then, by applying the example of "Standard Structuring", I documented the paraphrases by quoting "*standard references"*, which I found in research material. These are the most characteristic references in terms of importance with special theoretical interest or very extreme wording and which carry interesting messages for the scope of the study.

3) Finally, I used **Hermeneutic method** [35] to "*discuss"* the findings of the analysis.

IV. RESEARCH ANALYSES

The analysis of the research material showed the following:

A. Subjects and integration of knowledge

Taught subjects are linked with "horizontal interconnection", which is sought first, with the organization of the teaching unit based on cross-thematic concepts: '*Horizontal interconnection of A.P.S. for the subjects taught independently at Junior High school. This is achieved: i) With the parallel or successive teaching of concepts that are foreseen to be taught in the context of more than one different subject, that is, of the fundamental cross-thematic concepts* (General Part of DEPPS), and second, by developing *cross-thematic activities*. The topics of these activities complement each other in terms of concepts and contribute more effectively to the integration of knowledge: *'Horizontal interconnection of A.P.S. for the subjects taught independently at Junior High school. This is achieved: ii) By carrying out, in the context of different subjects, cross-thematic activities with different topics and content, which complement each other in the understanding of the fundamental cross-thematic concepts and lead to the creation of an integrated framework of knowledge and skills'* (General Part of DEPPS). Figure one shows the two main ways of subjects' connection:

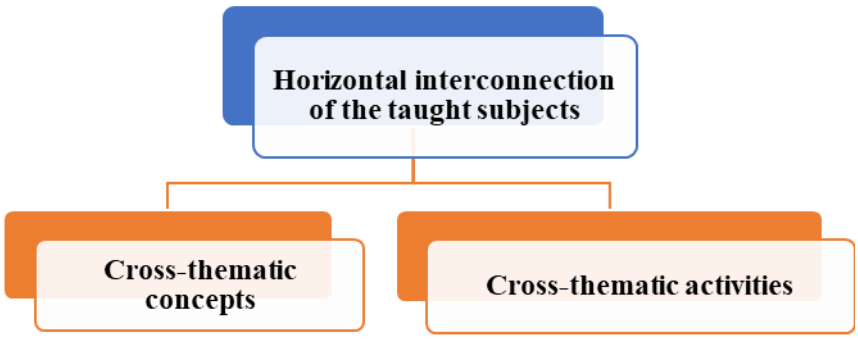

Figure 1: Two main ways of subjects' connection

1. In the first case, the concept-oriented organization is achieved by the parallel or sequential teaching of and aims, either at the connection of school knowledge with reality and, at a clearer understanding of social and physical environment by the students: *'Fundamental cross-thematic concepts were something new as element of organization of knowledge. In fact, these concepts are bipolar concepts, such as continuity and change. Seeing reality through such dipoles, helps students to a better understanding of the world and their experiences. Otherwise, without such approaches, school knowledge seems meaningless, without interest, cut off from reality'* (General Part of DEPPS).

Examples of such concepts are provided in the general part of the DEPPS but are also found in the Curricula of the various subjects as well as in some teacher's guides. The suggested cross-thematic concepts are: interaction, dimension, communication, change, unit, similarity-difference, culture and system:

'Some indicative fundamental concepts could be the following:
1. Interaction (cooperation, collectivity, conflict, dependence, energy…).
2. Dimension (space-time…).
3. Communication (code, symbolism, information…).
4. Change (evolution, development, periodicity…).
5. Unit-Total (individual, molecule, cell, personality, community, society…).
6. Similarity-Difference (equality, similarity, difference δια).
7. Culture (tradition, art…).
8. System (structure, classification, organization, balance, law, scale, symmetry…)' (General part of DEPPS).

The above proposed concepts can come from various sciences and act as connecting links between subjects. Therefore, often, some of them are common to many subjects of the same or different grades of Junior High School: *'In the context of the effort for the comprehensive and balanced development of students through the elaboration of topics, the development of skills and the cultivation of attitudes that in the international Bibliography referred to as Cross Curricular Themes (CCTs), some basic concepts of the various sciences are identified, which can be key links in the horizontal interconnection of the different subjects. Some fundamental concepts: a) are common to many different subjects of the same grade, b) appear frequently in subjects of different grades and, c) are related to the main purposes of education'* (General Part of DEPPS).

In addition, the basic cross-thematic concepts are found either in the texts of the textbooks to a small extent or in cross-thematic activities that are placed at the end of the unit to a greater extent: *'The writing of textbooks should be guided by the approach of fundamental concepts, both at the level of text to a small degree, and at the level of activities to a much greater degree'* (Appendix 1. instructions to the authors of the textbooks). In both cases, however, through these concepts it is sought the connection of a topic studied in a taught subject with both the experiential knowledge of the students and the knowledge already acquired from other subjects: *'These concepts and their interdisciplinary or cross-thematic extensions should be diffused (where possible) in the textbooks of the subjects, in order to ensure the possibility of utilizing knowledge and experiences that the student has already gained from other subjects. This way, a most holistic approach to knowledge is achieved'* (General Part of DEPPS).

2. The *cross-thematic activities*, on the other hand, are placed at the end of each teaching unit of each subject and through them the students are asked to examine a topic or problem in the light of specific subjects: *'The interdisciplinary approach can only be supported by methods of active acquisition of knowledge, which will be applied during the teaching of each subject and will be specialized in the cross-thematic" activities provided at the end of each unit* (Modern Greek Language Teacher's guide). The choice of a cross-thematic activity can be made either based on the fundamental cross-thematic concepts that are diffused in the text of the

textbooks, if and where this is possible, or on the topic of the respective unit of the subject: *'The choice of a cross-thematic activity is facilitated by the diffusion of interdisciplinarity in the text of the book (where possible) through fundamental cross-thematic concepts'*(Modern Greek Language, teacher's guide).

However, such activities, firstly, do not appear in all textbooks, but only in the subjects of Modern Greek Language, Modern Greek Literature, Homeric Epics and Philosophy and secondly, they are, contrary to their name, only interdisciplinary and not cross-thematic cause the theme or problem is only examined through the different taught subjects.

B. Projects and integration of knowledge

A more advanced form of integration is attempted through the projects, the *trans-disciplinarity or cross-thematic approach* in which the boundaries of the subjects are broken. For this reason, they were called *cross-thematic projects*, to state the catalysis of the boundaries between the subjects and the achievement of a more holistic approach of knowledge. The implementation of thematic projects can take place either in Flexible Zone [36, 37] or in 10% of the total teaching time of each taught subject within a school year: *'The cross-thematic projects examine wider thematic units and are indicative. Also, they can alternatively complete the ones mentioned in the A.P.S. "Indicative cross-thematic activities", for which about 10% of the teaching time is available. The Curriculum outline a way of developing the projects, point out the cross-thematic concepts that can be approached, as well as the taught subjects in which extensions can be made'* (General part of DEPPS).

The projects can be found mostly in the Curriculum of each subject (APS). These projects referrer to all grades of Junior High school, except the A.P.S. of History, in which different projects are proposed for each grade. The themes of the projects are, of course, related to the content of the subject, but they are, in general, open, to offer a more holistic approach. In addition, for the examination of the themes, the fundamental cross-thematic concepts related to them are listed, while, finally, indicative extensions to other subjects are suggested:
'*Theme of the project: Man, and sea. Students divided into groups and they:*
- describe the geographical relationship of their place with the sea (borders, type of sea, coastline, etc.),
- study the composition of the water element of the sea (sea pollution, meteorological phenomena, etc.),
- look for the role of the sea in the quality of life of people (aesthetic pleasure, visual representations, musical expression, element of culture),
- study vocabulary related to the sea, poetry-prose.
- consider the sea as a place of trade and shipping from antiquity until today, as a field of economic and political competition (colonies, wars, etc.) through the study of sources. Fundamental cross-thematic concepts: Communication, Culture, Science, Art, Technology, etc. Extensions in Literature, Geography, Natural Sciences, Aesthetic Education, etc.' (Curriculum of Modern Greek Language, Proposed thematic projects).

More rarely, some projects and only in some taught subjects do not involve specific taught subjects for the examination of the proposed theme or problem. Instead, they are based on knowledge produced from various areas of human activity:
'*Cross-Thematic project: Many experts argue that children's toys have something to do with the reproduction and perpetuation of stereotypes about the roles of sexes. To explore this view:*
a. Make a questionnaire for parents of children between the ages of one and fifteen. Edit the data you will collect in this process.
b. Systematically observe and record texts and other elements from toy ads and identify differences in the way they are addressed to boys and girls. Also, collect information from the internet, using keywords in search engines, such as stereotypes, prejudice, sexism, child play.
c. Finally, post a post on your school website entitled: "Children's toys for boys and girls. "There may be short texts, some posters that you will make, slogans, as well as the findings of the above research, presented with diagrams and comments' (Curriculum of Modern Greek Language, 3rd grade of Junior High school).

C. The connected subjects

The examined subjects are connected primarily with subjects from relative disciplines and secondarily with non-related ones such as Arts or Sciences. These attempted connections though are not common in every subject. More specifically, only in Ancient Greek Literature and Philosophy there is connection between all the related subjects. On the contrary, the rest of the other examined subjects are connected only with some and not with all their related ones. For example, History is mainly related to the Literature and only rarely a connection is made with other subjects, such as Modern Greek Language.

Regarding the connections with taught subjects from different disciplines, connections are attempted in the majority of examined subjects. An exception is "Ornithes" by Aristophanes, in which there is no connection with subjects from different scientific disciplines. Figure 2 shows all the taught subjects from different disciplines with which examined subjects are connected:

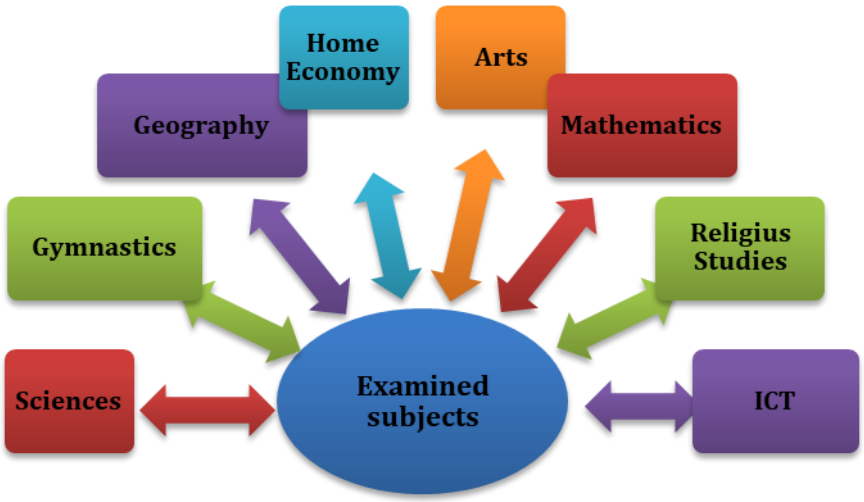

Figure 2: examined subjects and connections with taught subjects from different disciplines.

In any case, the connection between the examined subjects with other related or non-related is achieved primarily through the integrated activities and tasks assigned to students. These activities are found in both textbooks and the educational software. Secondly, only in some examined subjects the connection is accomplished through the texts anthologized in textbooks and in educational software. More precisely:

Connection through the activities

Connection between the subjects through the activities is attempted in the following ways:

1. by putting students to search for elements, information, cases, events, or works of art related to the examined text or unit. Most of these activities either encourage students to find out how the subject is being addressed in other subjects or urge students to seek and use information from them to carry out their activity, or, finally, to realize that there are different interpretations of the same theme. For example:

a) For the development of the theme "mania", which is found in the activity of the subject 'Ornithes", students are asked to seek information from Ancient Greek History, Religious Studies, and the Home Economy: *"Starting from the reference to the laconic mania of the Athenians, which was followed by the bird mania, look for:*

a) in Ornithes, elements common in Sparta and Nefelokokkigiati

b) in books of Ancient Greek History and in the book "The place and the people", information about the Spartan austerity

c) in your book of religious, corresponding elements of neglect of external appearance and indifference to material goods.

d) in your Home Economics book that you learned last year, information about the private and family life of the ancient Greeks - similarities and differences from the way of life of the Athenians and the Spartans as presented in Ornithes

e) in your book on the public and private life of the ancient Greeks, which you also learned last year, elements that can be linked to the dissatisfaction of some Athenians about the phenomena of their city and the search for alternatives." (Dramatic Poetry, Ornithes, textbook).

b) regarding the Arts, in the proposed activities students are asked to search for songs, lyrics and paintings relevant to the examined theme: *'Find a couple of excerpts on the theme of sea and travel. You can search for them: a. in the textbooks of the Ancient Greek literature (Homer's Odyssey, Herodotus Stories) and Modern Greek Literature, b. in Greek and foreign songs that you know or that can be suggested to you by your parents, your teachers or some of your friends'*(Dramatic Poetry, Eleni, textbook).

c) Mathematics are used either to examine a theme, which can be interpretated in varied ways, or to inform students the characteristics that distinguish the Science of Mathematics: '*For the organization of the activity, it will be necessary to utilize knowledge and bibliography from History, Ancient Greek, Literature, Religion, Physics, Geology and Mathematics. The presentation of each group should be oriented to the substantiation of its point of view with specific data that have emerged from its research, so that the discussion that will follow is not of a case-by-case nature and leads to a more general reflection on the value and advantages of science versus other forms of prediction'* (Modern Greek Language, 3rd grade of Junior High school, teacher's book, Unit 8).

d) Regarding the subject of Religious Studies, students are asked to identify the religious perceptions of different people in specific time periods: '*Students should collect and present to the class (starting from the*

knowledge they have gathered in the subject of Geography and Religion) information about the religious perceptions and beliefs of the peoples of the Middle and Far East" (Modern Greek Literature 1st grade of Junior High School, textbook).

2. with the use of texts, terms, and words from different sciences to teach the unit or as an occasion for comparison with the examined text. For example, in the Philosophical Texts in the proposed integrated activities, students are advised to use texts from Euripides' "Eleni" to examine the monologue and its function in both Dramatic Poetry and Sophistic Art: '*Cross-thematic activity: during the teaching of the unit, the text of Eleni of Euripides, whose teaching has preceded, can be used. To refer to the issue of rhetorical controversies reminiscent of a court battle, which Euripides uses. Also, to refer to the extensive monologue of Eleni - a technique applied by the Sophists, where with rhetorical self-sarcasm Eleni looks back with her thought in her life…*" (Philosophy, teacher's guide, Unit: sophistic movement).

3. by putting students to search and read literary texts related to the examined unit: '*Cross-curricular activity: students can a) examine linguistically the proverbs mentioned by Aristotle about friendship, b) compare the concept of friendship in antiquity with that of Christian love and to use texts from the Religious, c) use texts from Modern Greek Literature that refer to friendship, as well as examples from History that refer to friendships or enmities between peoples or persons'*(Philosophical Texts, teacher's book, Unit: Aristotle), or **by making students to find out how historical events are presented in literary texts:** *'It would be worthwhile to encourage students to do this cross-curricular activity. They would thus have the opportunity to see that literature and cinema, approaching the past in their own way and they can act as an adjunct to the scientific approach to history'*(Modern and Contemporary History, 3rd grade of Junior High School, unit 22: Notes on the treatment of exercises- activities).

4. through research work plans, the theme of which requires the connection of many subjects, such as, Mathematics, which function as a tool for the creation of a construction: '*Cross-curricular activities: with the help of the mathematics teacher students can draw different types of kites that correspond to geometric shapes. Discuss their flight capability*' (Modern Greek Literature, 1st grade of Junior High School, teacher's guide).

or Computer Sciences, with the help of which students prepare an action plan or a synthetic task that requires the creation of statistical charts, or the writing of texts in word-office: '*This activity requires the cooperation of mathematics and computer science. It involves conducting a small survey and constructing a multimodal text (statistical chart and accompanying text)'* (Modern Greek Language, student's book, unit: Technology).

5. with activities that suggest the organization of performances or educational visits. For example, in Literature it is proposed to organize an exhibition on the various manifestations of human religiosity in the context of which visits to places of worship and gathering information on religious customs and traditions of different religions are provided: '*We can mobilize our students in many alternative directions: to organize a small exhibition in the classroom dedicated to the various expressions of human religiosity, to visit and photograph churches and chapels in their area, to compare Greek Orthodox churches with catholic or other cults, to collect and compare religious customs and traditions, which vary depending on the religion'*(Literature, 1st grade of Junior High School, teacher's guide).

Then, in some cases, always in collaboration with the musician, it is proposed students to organize events or theatrical performances: '*In collaboration with the music teacher, a short performance by Karagiozis can be organized and staged by the students (regarding the use of theatrical texts in the A 'Junior high school in the subject of Modern Greek Literature, see the proposal of Antigoni Tsarbopoulou" theater: the comic scene "in the volume Reading literature at school… a new teaching proposal, edited by Venetia Apostolidou, Victoria Kaplani, Eleni Hontolidou, Typothito- George Dardanos, Athens 2000, pp. 185-200)'* (Modern Greek Language, 1st grade of Junior High School, textbook).

6. in other cases, starting from the text of the teaching unit, the students are invited to reflect and discuss the theme that emerges from the text and the unit: Examples of such topics are found in most of the examined subjects in this research. An example is the subject Dramatic Poetry, "Eleni", in which students are asked to reflect on the effect of music on the human psyche and more broadly on the lives of adolescents themselves: '*In Stasimo we are studying, Dimitra smiled after the great mourning, when she was overwhelmed by the charm of music. On this occasion, think about the effect of music on the human psyches. What music do you listen to at different times in your life? How much does it affect you? Why do people of different ages like different types of music? Include the conclusions from this reflection in a relevant text that will be published in your school newspaper*' (Dramatic poetry, Eleni, textbook).

7. by putting students to watch movies, or listen to music, so that students can understand how a historical event is represented through cinema and music. Examples of such activities are incorporated primarily in History and secondly in Literature. For example, in the history textbook of 3rd grade, students are encouraged to watch movies related to the topic of the unit, such as the movie "Revelation now!" of Coppola referring to the Cold War period and Nikos Perrakis' film "Loofah and Variation" that satirizes the period of dictatorship in

Greece: '*Watch the movie "Apocalypse Now!" and discuss it in your class'*(History, 3rd grade of Junior HighSschool, textbook). '*Or see in the cinema: Nikos Perrakis, "Loofah and Variation" (1984). Dictatorship in Greece with a humorous mood*" (History, 3rd grade of Junior High School, textbook).

8. In rare cases, mainly in Philosophy and less often in Literature, the connection with certain subjects is of a comparative nature. For example, in the Philosophical texts of 3rd grade, in some suggested activities, the students are asked to compare the perceptions and beliefs of ancient Greek philosophers with corresponding Christian ones: '*In the context of the comparative view and the interdisciplinary approach, we could also look at the effects-correlations, the similarities and differences between cynical and Christian theology. In this context, cynical practice can be correlated with the teaching of Christian asceticism / monasticism and the model of the cynical ascetic with the Christian-departed monk can be contrasted. One can also consider, for example, the simple cynical way of life with the ascetic Christian way of life or comparatively study the common moral values (self-sufficiency, restlessness, homelessness, apathy) of Cynicism and Christianity "(see Religious Studies of the 3rd Junior high school, 17)*'(Philosophical Texts, 3rd grade of Junior High School, teacher's guide).

9. Finally, the connection of examined subjects is attempted through creative activities in which either students are encouraged to express themselves artistically by painting or in other ways: '*Illustrate Stasimo with its content as a source of inspiration. Use photos, paintings, collages, posters, etc., which you will create yourself or search in magazines, books, on the Internet. You can post your work on a blackboard* "(Dramatic Poetry, Eleni, textbook), either to listen, sing or even compose a rhythm in collaboration with the music teacher: '*Dedicate a part of the teaching hour to listen to well-known folk songs on misery and problems of abroad, such as songs of Kazantzidis and Dalaras'*(Modern Greek Literature, 1st grade of Junior High School, textbook).

Connection through texts in taught units of the different subjects

In contrast to the above, the connection of examined subjects by using texts from other both related and no-related subjects is rarer and occurs only in the following cases:

1. In History, in some units which contain sources either from works of Philosophers or from works of scientists or finally from religious texts. These sources serve as additional and authentic material for the examination of the unit and seek to give another perspective and dimension to it or to reinforce the dominant narrative contained in the main text. For example, in Modern Greek History of the 3rdgrade in the unit "Science and reflection on the world in the 19th century" an excerpt from Charles Darwin's work "The Origin of Species" is collected, which provides some basic assumptions of Darwinian theory, in order to strengthen the main narrative of the taught unit: '*Charles Darwin: the theory of evolution*: *First, nothing can be more difficult than to believe that the most complex organs and organisms have evolved not as a result of the action of a higher being, but from the accumulation [...] of innumerable small changes. [...]. However, the difficulty of believing the above position, [...] ceases to exist if we realize the following truths: that all the organs and organisms we can examine show or could show degrees in their evolution, that all the organs and organisms continue to change, to some extent, and that, in the end, in nature there is an endless struggle for life that leads to the survival of every new variant that has something to offer. The truth of these proposals cannot, I think, be disputed. The origin of species, 1859, ch. 14 (conclusions*) (Modern Greek History, 3rd of Junior High School, textbook).

2. In Homeric Epics, **Herodotus Stories and Modern Greek Language** excerpts from literary works are contained either as parallel texts for reading, so that students can understand that the same topic or theme appears in literary works, or as texts for reflection and discussion regarding on the theme of the teaching unit. For example, in section 13 "The Battle of Thermopylae" in "Herodotus Stories" Cavafy's poem "Thermopylae" is proposed for parallel reading, so that students to find out a) that an important historical event can affect Art and in particular Literature and b) the way in which this historical event is presented through Literature:

'Thermopylae K. P. Cavafys'
Honor to those where in their lives
appointed and guarded Thermopylae.
Never out of debt do not move. […]
And more value they need,
when they predict (and many predict)
how the Nightmare will appear in the end,
and the Medes will finally die. (Modern Literature, 3rd grade of Junior High School, textbook).

3. Rarely, in **Herodotus Stories and in Homeric Epics** an attempt to connect the content of the examined section with the Religious is made by incorporating parallel texts from the "New and Old Testament". A typical example is in Homer's "Odyssey" in which excerpt of a text from the "Acts of the Apostles" is anthologized. The text describes the behavior of the Apostle Paul, who, while traveling by ship, fell into a storm. In this difficult time, the Apostle invoked God's help and managed to survive and save the other men. In this

excerpt, students can identify similarities and differences between the way in which a similar situation (storm-shipwreck) is described and dealt with in an epic work and in a religious text. In addition, they could make observations and interpretations regarding the way in which a critical moment is dealt with by the anthropocentric approach presented by "Odyssey" and the theocentric approach presented by the religious texts: '*[The behavior of the Apostle Paul in a storm]. When a slightly south wind began to blow, [...] they raised their anchors and sailed near the coast of Crete. After a while, a stormy wind broke out on the island [...]. He grabbed the ship, and as it could not go otherwise, we left it and the wind, and the waves were going. [...] Because we were suffering a lot from the storm, the next day we threw the cargo into the sea, and the next day we threw into the sea with our hands all the equipment of the ship. For many days neither the sun nor the stars were visible, the bad weather continued, and so all hope of being saved was lost. Nobody wanted to eat anything anymore. Then Paul stood among them and said: "Men, you ought to have heard me and not started from Crete. Thus, we would have escaped from this suffering and from the damage. But now I advise you not to lose your courage. None of you will be lost, only the ship. Last night an angel of God appeared to me, to whom I belong and whom I serve, and he said to me: "Do not be afraid, Paul! You must appear to the emperor, and so God for your sake will save all who are with you in the ship. That is why you have courage, men! Because I trust in God that it will be done as the angel told me. We must run aground on an island'*(Homeric Epics, Odyssey, 1st grade of Junior High School, textbook).

4. In **Modern Greek Language** and only in some thematic units, a connection with the Natural Sciences is attempted and achieved through a collection of scientific articles or research. In all these cases the texts are not found in parallel in the textbooks of Natural Sciences, as well, although the purpose of the anthology of such texts is to show the role and contribution of each science to the examined topic of the unit or the different way a phenomenon is examined from different sciences. For example, in Modern Greek Language for the 3rd grade in the section "Forward to the future" some of the anthologized texts are excerpts from scientific works in the field of Genetic Technology, for students to understand the different views on the effects of technology on humanity and the concerns it raises in people: *'Text 5 [Do the sciences threaten us?] […] Many smart and capable people realize that there is a real. For example, Pope John Paul II, in a speech to UNESCO, expressed the following view: "The future of man and humanity is threatened, seriously threatened, despite the very kind intentions of the people involved in the Sciences. Their discoveries have been and continue to be exploited - at the expense of morality - for purposes of destruction and death to an extent never achieved. This causes terrible disasters. This can be seen in the field of genetic modification and biological experiments and in the field of chemical, bacteriological and nuclear equipment.'*(Modern Greek Language, 3rd grade of Junior High School, textbook).

5. Finally, in some **software packages** the organization of the contents is thematic. The packages are structured in specific thematic units, which either derive from the same examined topics in textbooks book or they are original. This means that they do not appear in the corresponding textbook. In the latter case the topics are broader and offer a more holistic approach and examination, such as in the Local History software, which is structured in four main sections with broader content, and which can be approached either interdisciplinary or cross-thematically: '*In the Local History lesson there is no book for the student and therefore the corresponding software is related to the teacher's guide. In this case the software is structured in thematic units which are broader and offered for interdisciplinary and cross-thematic approach: Four main thematic units: a) Settlement of refugee populations, b) Castles and States: Parallel historical routes, c) Residential identity of an area and d) From the "enclosed" city to bourgeois society (19th -20th century). The creation of the new city of Kavala* '(Local History Software, 3rd grade of Junior High School).

V. DISCUSSION OF RESEARCH FINDINGS

The analysis of the research material showed that connections between the taught subjects are attempted mainly through the cross-thematic activities addressed to students and rarely through the content of the taught units in the researched subjects. Although, it is found that integration is not the basis of organizing the structure and the content both, of the textbooks and digital software. On the contrary, emphasis is placed on the material to be taught from each different subject and connections between them are sought only superficially through the proposed activities. Furthermore, the listing of these activities at the end of the unit does not allow either the organization of teaching around a problem or topic nor its study by students in an exploratory way. It is, also, worth noting that in most textbooks: a) the activities contained are basically traditional, b) any proposed cross-thematic activities are either only interdisciplinary in nature and not cross-thematic, and c) cross-thematic projects do not appear in most of the researched textbooks or software. Likewise, the researched software is mostly closed and behavioral in nature and only rare provides the interdisciplinary or thematic approach [36].

The above findings can be explained from curriculum designers' decision, that integration was better to be achieved, mainly, through the activities, because they did not want to proceed with the design of a purely Integrated Curriculum at the given time for many reasons such as the following:

a) Targeted Curriculum was considered useful and helpful, given the insufficient pedagogical preparation of teachers - mainly for the new ones- because it worked as a framework for organization, implementation, and evaluation of their teaching. In other words, it offered teachers confidence in teaching and in organizing their lesson [37].

b) In Greek educational system the educational processes in Secondary Education gives emphasis on the students' entrance in the University and for this reason the educational system shows obsession with exams and for that it limits the comprehensive development of children and the cultivation of a variety of skills. To achieve the above goal, an organized and Targeted curriculum divided in subjects is considered more necessary and effective, in order school to provide everyone with all the same opportunities to achieve the desired goal [38].

c) in addition to Greek education policy [39], most European education systems maintained the model of Targeted Curriculum and introduced integration as a parallel or complementary innovation to their new curricula [40] and [41].

The above conclusion is reached, as well, by many researchers on the curricula, who point out that D.E.P.P.S. and A.P.S. are closer to Targeted Curriculum [42, because they give emphases on the proposed goals and objectives arising from the taught subjects. In fact, the goals and objectives proposed in examined curricula remain basically behavioral and are still based on the Bloom's classification [43]**.** Other researchers consider that these are subject-based curricula, as the distinct subjects are not abolished, and the organization of the teaching contents is based on each subject's goals [44].

Regarding the accompanied educational material, textbook writing teams and digital designers followed the instructions given to them, according to which textbooks and software should incorporate interdisciplinary or cross-thematic activities at the end of each section (General part of the DEPPS: annex: instructions to the authors of the textbooks, p. 649). Moreover, the lack of information and training of writing teams on the issue of integration and Integrated Curricula made the task of integration in textbooks even more difficult, as groups were asked to follow the writing instructions without often understanding the logic, the function and the forms of integration or they were not convinced of integration's pedagogical necessity [45] and [46].

Finally, an important factor that negatively influenced the coherence between the different educational material produced, was the absence of the appropriate time frame that was necessary for the design and pilot implementation of the innovations introduced. It is known that the production of textbooks and software that accompanied the curricula was ended in a very short time. This fact did not allow the smooth cooperation of the writing teams both with each other and with the responsible design teams of Curricula [47]. Consequently, between Curricula and their accompanying material there is a significant divergence in terms of integration, and eventually, the impression that they are not even correlated products.

VI. CONCLUSION

In conclusion, taking into account all the results that emerged from the analysis of the material under investigation, the general finding is that the attempt of introducing integration into Greek Compulsory Education with D.E.P.P.S. and their accompanying textbooks, and software, presents significant weaknesses and shortcomings because in fact: a) Curricula are not Integrated, b) the integration is attempted only through the activities for the students, and c) the connections between the subjects are either superficial or not present in all taught subjects. To reinforce the above research findings, it is necessary a field research in Greek Compulsory Education, which could light the problems and dysfunctions of Greek educational system, that might impede integration, such as the systematic pedagogical training of future teachers, the centralized way of planning curricula, the obsession of the official planning bodies and many academics in a traditional conception of knowledge and especially school, etc.

REFERENCES

[1]. Schiro, S., Curriculum theory: Conflicting visions and enduring concern, 2008, Los Angeles: SAGE.
[2]. Sjoberg, S., Constructivism and Learning,2010, Elsevier: Oxford.
[3]. Harris, R.K. and A.P. Alexander, Integrated Constructivist Education: Challenge and Reality. Educational Psychology Review, 1998. **10**(2): p. 115-127.
[4]. Pring, R., Curriculum integration. Journal of Philosophy of Education, 2006. **5**(2): p. 17-200.
[5]. Ferguson, K., R. Reynolds, and S. Macqueen, Integrating curriculum: a case study of teaching Global Education. European Journal of Teacher Education, 2018. **41**(2): p. 187-201.
[6]. Gehrke, N. and D. Young, A look at curriculum integration from the bridge. Curriculum Journal, 1998. **9**(2): p. 247-260.
[7]. Drake, S. and J. Reid, Integrated Curriculum as an Effective Way to Teach 21st Century Capabilities. Asia Pacific Journal of Educational Research, 2018. **1**(1): p. 31-50.
[8]. Drake, S., Creating integrated curriculum,1998, California: Corwin Press.
[9]. Fogarty, R., The Mindful School: How to Integrate the Curriculum,1991, Palatine Illinois: Skylight Publishing

[10]. Drake, S., Creating standards-based integrated curriculum: aligning curriculum, content, assessment, and instruction, 2007, California: Corwin Press.
[11]. Beane, J., Curriculum integration: the core of a democratic education, 1997, New York: Teacher College Press.
[12]. Dewey, J., The child and the curriculum,1902, Chicago: University of Chicago.
[13]. Steffe, P.L. and J. Gale, Constructivism in education,1995, New Jersey: Lawrence Erlbaum Associates, Inc.
[14]. Carr, D., Towards an Educationally Meaningful Curriculum: Epistemic Holism and Knowledge Integration. British Journal of Educational Studies, 2007. **55**(1): p. 3-20.
[15]. Clive, B., Postmodernism, pedagogy, and philosophy of education. Philosophy of Education, 1993. **27**: p. 1-13.
[16]. Mohr, K. and R. Welker, The Role of Integrated Curriculum in the 21st Century School, 2017, University of Missouri, St. Louis.
[17]. Phillips, F., Ch.YingYub, T. H. Mahmoud and Ab. El Akhdaryb, The knowledge society's origins and current trajectory. International Journal of Innovation Studies, 2017. **1**(3): p. 175-191.
[18]. Lytras, M., The Knowledge Society: a manifesto for Knowledge and learning. International Journal of Knowledge and Learning, 2005. **1**(1/2): p. 1-11.
[19]. European Commission, Agenda 2000: for a stronger and wider Union1997, Luxemburg: OFOP.
[20]. Commission of the European Communities, White Paper on education and training teaching and learning towards the learning society, 1995, Brussels.
[21]. CIDREE, Across the great divides: report of the CIDREE collaborative Project on cross-curricular themes1998, United Kingdom: Scottish Consultative Council on the Curriculum.
[22]. CIDREE, Cross-curricular themes in secondary education: Report of a CIDREE collaborative project2005, Belgium: CIDREE.
[23]. Alachiots, S. The discussion on education and the proposal for a modern educational system. The step, 2002. 1 (2): 5-10.
[24]. Bonidis, K., Modern curricula, and textbooks in Greece: production process, format and content, "real" curriculum and the perspectives. Modern Education, 2003. **131**.p.25-40.
[25]. Alachiotis, S., For a modern education system: Availability and Flexibility Zone change education and enhance the quality of education. Inspection of Educational Issues, 2003. **7**: p. 1-20.
[26]. Dalkos, G., The Curricula and the need for a cross-curricular approach to knowledge. The educational, 2003. **65-66**: p. 86-97.
[27]. Kouloubaritsi, A., Application of the Interdisciplinary Approach to Curricula, teaching and textbooks, 2005. New Education, **116**: p. 30-44.
[28]. Matsagouras, H., Interdisciplinarity in school knowledge: conceptual framing and work plans, 2006. Athens: Grigori.
[29]. Edgerton, R., Survey Feedback from Secondary School Teachers that are Finishing their First Year Teaching from an Integrated Mathematics Curriculum, 1990, Washington: DC.
[30]. Kurt, R. and H. Henning, Collaboration among teachers, researchers and in service trainers to develop an integrated curriculum. Journal of curriculum studies, 1998. **30**(6): p. 661-667.
[31]. Rennie, L., The impact of an integrated curriculum on student attitudes about science and learning of electricity concepts, 2007, Australia: Australia Association for Research in Education.
[32]. Antoniou, F., Integration of Knowledge in modern Greek junior High school, 2016, Thessaloniki: Aristotle University.
[33]. Mayring, P., Qualitative Inhaltsanalyse: Grundlagen und Techniken. 1993, Weinheim: Deutscher Studien Verlag.
[34]. Kohlbacher, F., The Use of Qualitative Content Analysis in Case Study Research. Qualitative Social Research, 2006. **7**(1): p. 1-30.
[35]. Kinsella, E.A. Hermeneutics and Critical Hermeneutics: Exploring Possibilities Within the Art of Interpretation. Forum: Qualitative Social Research, 2006. **7**.
[36]. Antoniou, F., Integration of Knowledge in modern Greek junior High school, 2016, Thessaloniki: Aristotle University.
Kouloubaritsi, A., The Flexible Zone Changes School: A Case Study Through Participatory Processes and Mutual Commitments. Educational Issues Inspection, 2002. **7**: p. 57-79.
[37]. Mathaiou, D., The basic vocational training of secondary school teachers. Critical and comparative view of its ideological and institutional character. In The basic vocational training of secondary school teachers: A critical and comparative view, Mathaiou, (Editor), 2011, Athens: Diadrasi. p. 15-64.
[38]. Pedagogical Institute, Quality in education: research to evaluate the quality characteristics of the Primary and Secondary Education system, 2008, Αθήνα: Greek Ministry of Education.
[39]. Iliadis, Il., The educational reforms after the accession of Greece to the European Union, 2014. University of Western Macedonia, Greece.
[40]. CIDREE, Across the great divides: report of the CIDREE collaborative Project on cross-curricular themes1998, United Kingdom: Scottish Consultative Council on the Curriculum.
[41]. CIDREE, Cross-curricular themes in secondary education: Report of a CIDREE collaborative project2005, Belgium: CIDREE.
[42]. Matsagouras, H., Interdisciplinarity in school knowledge: conceptual framing and work plans, 2006. Athens: Grigori.
[43]. Bloom, B. and D. Krathwohl, Taxonomy of educational objectives: the classification of educational goals, by committee of college and university examines. Handbook 1: Cognitive domain, 1956, New York: Longmans.
[44]. Matsagouras, H., Interdisciplinarity in school knowledge: conceptual framing and work plans, 2006. Athens: Grigori.
[45]. Gerogiannis, K. and S. Bouras, Curriculum Design-New Trends. In Primary Education and the challenges of our time, 2007. Proceedings of the national conference on 17-20 May, Ioannina.
[46]. Matsagouras, H., Flexible Zone: an educational innovation that changes the school. Educational Issues Inspection, 2003. 6: p. 15-30.
[47]. Dalkos, G., The Curricula and the need for a cross-curricular approach to knowledge. The educational, 2003. 65-66: p. 86-97