Universitat Autònoma de Barcelona

School Culture and Change in the Context of the Greek Public Primary Education: Under the Circumstances of the 21st Century

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Doctoral Dissertation

School Culture and Change in the Context of the Greek Public Primary Education:
Under the Circumstances of the 21st Century

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FA CONSTAR QUE

La investigació realitzada, sota la direcció de la signant, per la Sra Areti Chalkiadaki, amb el títol de

School Culture and Change in the Context of the Greek Public Primary Education: Under the Circumstances of the 21st Century,

reuneix tots els requeriments cinetífics, metodològics i formals exigits per la legislació vigent per a la seva lectura i defensa pública davant la corresponent Comissió, per l'Obtenció de Doctora en Educació per la Universitat Autònoma de Barcelona, per tant considerem procedent autoritzar la seva presentació.

Bellaterra, 3 de setembre del 2018

Signat: Marina Tomàs Folch

Resumen

Teniendo en cuenta la necesidad de cambio de la práctica educativa y de las metodologías de enseñanza debido a la evolución de las condiciones propias de la sociedad contemporánea, se tratan temas relacionados con la implementación práctica de iniciativas relevantes, con énfasis específico en el rol de la cultura escolar. La discusión se sitúa en las coordenadas temporal del siglo XXI y espacial del sistema educativo griego. Las áreas conceptuales analizadas en el marco teórico de la tesis incluyen la introducción e implementación del cambio y de la innovación en educación, y especialmente la enseñanza y el aprendizaje, las habilidades del siglo XXI, la cultura escolar y las características del sistema educativo griego.

La metodología de la investigación se desarrolla sobre una base pragmática, combinando métodos de investigación cuantitativos y cualitativos, dentro de un diseño secuencial de tres etapas. El desarrollo de las herramientas de la investigación y el análisis de datos se realiza con referencia a un modelo, originalmente diseñado, de cuatro tipos de cultura escolar. Los tipos de cultura del modelo se diferencian con respecto a los diferentes niveles de predisposición al cambio. Estos tipos de cultura serían: cultura de rechazo al cambio, cultura de resistencia al cambio, cultura favorable al cambio y cultura de creación del cambio.

Los métodos de investigación utilizados incluyen entrevistas semiestructuradas preliminares, una encuesta, entrevistas semi-estructuradas de seguimiento, observación de campo y análisis de documentos. El objetivo principal de las entrevistas preliminares fue proporcionar una idea inicial de la conceptualización de la cultura escolar que, además, contribuyó al desarrollo de la herramienta de la encuesta. El cuestionario central i está compuesto de seis dimensiones de la cultura, a saber: los valores prevalecientes y la moral, las relaciones, la gestión, la identidad del estudiante y la familia, y las áreas de énfasis académico. Estas dimensiones se abordan a través de sus la percepción de la realidad y de los deseado, la comparación entre ambas percepciones da como resultado el reconocimiento de las brechas existentes. Las entrevistas, observación y análisis de documentos de la etapa de seguimiento tuvieron como objetivo el enriquecimiento y la triangulación de los información obtenida en los cuestionarios , proporcionando una comprensión más profunda de los conceptos investigados en la educación primaria griega.

Los resultados apuntan a una cultura escolar real que combina características negativas y positivas hacia el cambio. La predisposición de los aspectos de las familias y del desarrollo de las habilidades personales, sociales y cívicas se evalúa como más negativa,mientras que la del aspecto de la gestión como más positiva. Los maestros y directores expresan la necesidad de una predisposición más positiva a la introducción del cambio en todos los aspectos culturales investigados. Se ha encontrado que las características sistémicas específicas, como la centralidad y el énfasis en el rendimiento académico, tienen un gran impacto en la formación de la cultura escolar y, en consecuencia, en la evolución de la práctica educativa. La discusión de los hallazgos de la investigación da como resultado sugerencias específicas para la política. Las cuestiones que se consideran de mayor importancia incluyen la comunicación dentro del sistema, la capacitación continua con respecto a las condiciones actuales, el uso mejorado y más significativo de los proyectos, el empoderamiento del papel de los directores y más flexibilidad y participación en la toma de decisiones a nivel escolar.

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This thesis is the result of the work undertaken during the past three years in the department of Applied Pedagogy of the Autonomous University of Barcelona, which I would like to thank, first of all, for accepting me as a doctorate student and, then, for supporting me through all the relevant procedure. I would, particularly, like to express my honest, special thanks to my supervisor Dr Marina Tomás i Folch, who has, always, been readily available and kindly willing to respond to all my questions and offer me valuable guidance in the design and development of my research. This work would not have been completed without her academic and personal support.

To my family, my father, Giorgos, my mother, Eleni and my brother, Leonidas, for their unconditional support in each and every stage of this doctorate. For offering their help whenever needed and, always, with a smile. For sharing my moments of stress, worries, failure, happiness and success.

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Abstract

Taking into account a reported need for change in the educational practice and teaching methodologies due to evolving contemporary conditions, issues related to the practical implementation of relevant initiatives are discussed, with specific emphasis put on the role of school culture. The discussion is placed in the time context of the 21st century and the place context of the Greek educational system. The conceptual areas analyzed in the theoretical framework of the current thesis include the introduction and implementation of change and innovation in education, and especially teaching and learning, the 21st century skills and school culture. The concept of school culture is analyzed through a discussion of its various definitions, and its relationship to educational outcomes, the concept of school climate and the characteristics of the Greek educational system.

The research methodology develops on a pragmatic basis, combining quantitative and qualitative research methods, within a sequential three-stage design. The development of the research tools and the data analysis is conducted with reference to an originally designed model of four school culture types. The culture types of the model are differentiated with regards to different levels of predisposition to the introduction of change. They include the change rejective, change resistant, change friendly and change creative culture types.

The research methods used include preliminary semi-structured interviews, a survey, follow-up semi-structured interviews, field observation and document analysis. The main objective of the preliminary interviews was to provide an initial insight of the conceptualization of school culture that could, also, inform the improved development of the survey tool. The questionnaire used in the core stage investigates six culture dimensions, namely the prevalent values and morale, the relationships, the management, the student and family identity and the areas of academic emphasis. The dimensions are approached through their actual and their desired characteristics. The comparison of the two perspectives results in the recognition of value gaps, which point to areas where intervention is considered necessary. The interviews, observation and document analysis of the follow-up stage aimed at the enrichment and triangulation of

findings, providing a more thorough understanding of the investigated concepts in the Greek primary education.

The results point to an actual school culture that combines both change negative and change positive characteristics. Specific aspects are evaluated as more change negative, such as the families and the approach to the development of the personal, social and civic skills, while others as more change positive, such as management. A need for a more positive predisposition to the introduction of change is expressed by both teachers and headteachers in all cultural aspects investigated. Specific systemic characteristics, such as centrality and emphasis on academic achievement, are found to have a great impact in the school culture formation and, consequently, in the evolution of educational practice. Taking into consideration the identified cultural aspects that may impede effective implementation of change, as well as those resources that can contribute to the achievement of educational change objectives, the discussion of the research findings results in specific suggestions for policy. Issues that are regarded of heightened importance include communication within the system, continuous training with regards to current conditions, enhanced and more meaningful use of projects, empowerment of the headteachers' role and more flexibility and participation in decision-making at the school level.

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1. INTRODUCTION

1.1. Research Problem

Change is a constant reality throughout human history and, indeed, an accelerating one in the contemporary world and the modern society. Education, being an institution so closely associated with the social conditions and the future world, is directly affected by this reality. Changing political, social and economic systems pose the need for a new identity for education. Schools are expected to prepare students for a globalized world of newly emerging market rules and cultural structures. Skills determined by the educational paradigm formed within industrialization are now, only, regarded as part of the spectrum of skills expected to be needed by current students and future citizens. Current market requirements point to the development of a greater variety of competencies such as digital literacy, team-working, creativity, flexibility, divergent thinking and others. At the same time, contemporary social conditions pose the need for the students' cultural development into world citizens with a good understanding of the forces of interdependence, that have, already, begun to form globally. This new educational reality, further, creates the need of a new culture of learning, since learning is, in fact, a dynamic process which is in constant conversation with its context. In this new social and educational context, the role of the teacher is changing. Emphasis shifts from teaching to learning and from a mechanistic view of education towards a more organic one.

Educational policy and practice may answer to these changing conditions and needs in numerous ways ranging from simplistic adaptations within a familiar context to radical educational reform. In any case, educational change is, often, introduced via a top-down route, although research has shown that bottom-up approaches are more effective. Context is recognized as a factor that cannot be disregarded, as it determines the success or not of the implementation of suggested policies and introduced reforms. Consequently, it is regarded highly significant that change is initiated with respect to the particularities of any specific context. In the field of education, it is accepted that no one has a better insight of the particularities of the educational practice than the teachers and headteachers, who, actually, constitute a decisive factor in the implementation of any policy at the school level. Taking, also, into account that change is a deeply emotional process that can involve high levels of resistance, it becomes clear

how the teachers' and headteachers' participation in the choice and formulation of educational change is essential.

In Greece, the introduction of educational change and reform has been a constant process during the past decades, further accelerated in the conditions of the 21st century and the economic crisis in the region. The most recent educational reform attempts included the "Education and Lifelong Learning" program, which was initiated in the period 2007-2013 and signed to continue until 2020. The program introduced, apart from a new curriculum and among others, the initiatives of the "New School-School of the 21st century", the "Digital School" and the "Three-year Plan for Education" for 2017-2019. Introduction of change is a process, though, that is commonly met with resistance and characterized by delay and shortcomings. In most cases, it is realized in a top-down, unfortunately piecemeal manner within a governance and administration system described by the Organization of Economic Cooperation and Development (2016c) as highly centralized and deeply bureaucratical. Consequently, it almost comes as no surprise that research in the region of Greece has shown negative reform implementation results and a school identity generally characterized by inertia and introversion (Spiropoulou, Varvouraki, Koutra, Louka & Mpouras, 2007; Kouloumparitsi, 2008; Kiriakodi & Tzimoyiannis, 2015).

Throughout literature, school culture is identified as a core factor related to the meaningful introduction and successful implementation of educational change (Kochanek, 2005, in Hallam & Hausman, 2009, Markoff, 2014, Reed, 2013 & Tschannen-Moran, 2014, in Ganon-Shilon & Schechter, 2017, Karadag & Oztekin-Bayir, 2018). The assumptions, values, beliefs and practices that constitute school culture give every school and every educational system a certain dynamic identity. These cultural aspects can determine the school or system predisposition to change and the introduction of new concepts and reform. For this reason, the evaluation of school culture is considered as vitally important. It can reveal behavioral trends and ideas impeding change, protective factors that can affect reform outcomes, as well as resources available within the system that can assist and even enhance the reform process (Roach & Kratochwill, 2004). At the same time, it can result into the accumulation of suggestions derived from the basis of the system within a context of bottom-up change initiation.

Taking into consideration the difficulties and insufficiencies of educational reform attempts recognized by research in the Greek educational system, the current research wishes to approach the issue through the lens of school culture. Studying school culture in the context of the Greek primary education is expected to give an insight into the values and beliefs that, possibly, impede or can, potentially, assist educational change. Consequently, the evaluation of school culture, through the identification of these forces, can shed light to the reasons why policy implementation results may not be as expected. The comparison of the current school culture with the desired one, which is also an objective of the research, will give the teachers and headteachers a chance to express the educational needs as experienced by them through the everyday school practice. At the same time, it can accumulate suggestions regarding areas in need of change in a bottom-up direction that will take into account the specific context, with all the aforementioned advantages of the particular approach.

1.2. Research Aim

The aim of the current research is to study the predisposition of school culture to the introduction of change in teaching practices in the context of the Greek public primary education, especially with regards to the conditions of the 21st century. The actual school culture will be compared with the preferred school culture in search of potential value gaps.

1.3. Research Questions

The questions of the current research are grouped into three conceptual categories, namely cultural predisposition to change, academic emphasis and practices and value gaps between the actual and the desired school culture. The research questions are analyzed below.

1.3.1. Cultural predisposition to change.

1.3.1.1. The aim of education.

How is the predisposition of school culture to change formulated through the teachers' and headteachers' perceptions of the aim of education?

Education is a concept that has taken many forms throughout history. Compared to the long biological history of man, schooling is only a recent institution since the systematization of public education mainly developed through the past two centuries. No matter what the form of education, or simply teaching in its wider meaning, has been throughout human history, the aim of education has been majorly different in distinct time periods depending on the prevalent socio-economic conditions. The teachers' perception of the aim of the education is held to be of decisive importance as it determines the way in which strategies are practically implemented in everyday school life. It is, also, related to the concept of vision as a driving force that unites and directs efforts towards the accomplishment of the goals and objectives set. Especially in times of change and uncertainty, vision can offer motivation and inspiration. A coherent vision provides a framework of thinking over events and determines the evolution of school culture. The current research wishes to investigate what contemporary Greek public primary school teachers and headteachers consider the aim of education to be. It is considered important to study prevalent, as well as differentiated perceptions on the issue that might signal a trend for change.

1.3.1.2. Beliefs about change.

What are the core beliefs and values of the school culture with regards to change? Shared beliefs and values form the basis of school culture. They define which mode of behavior or state is preferable and better acceptable and, as such, they affect the formulation of judgments, preferences, conceptualizations and expectations of behaviors. They, also, greatly affect choices and actions, as they translate into behavioral tendencies or even norms. In an educational system traditionally characterized by centrality, introversion and control, such as the Greek one, it is important to investigate the position of culture within the spectrum of stability and safety versus flexibility and risk-taking, as this results from prevalent beliefs about change. The acknowledgment of prevalent tendencies within this spectrum is held of primary importance, as they are believed to have a great impact on the implementation of reform, innovation and change at the school level. It is recognized that the existence and effect of beliefs, mainly, takes place in the unconscious area of school life. However, research has shown that people are capable of naming the basic beliefs and values that guide their judgments, decisions and actions when asked, and that these can be observed, mainly, through the choice of practices. Based on this assumption, the

current research wishes to evaluate the prevailing shared values and beliefs that formulate school culture in public primary education in the region, in order to achieve an insight of the processes through which meaning and importance is attached to details of the everyday school life and the forces that guide judgments, decisions and actions at the school level.

1.3.1.3. Strength and homogeneity of the school culture.

How strong and homogeneous is school culture?

The concept of cultural strength is related to the extent to which shared values, beliefs and assumptions are clearly perceived, defined and expressed through choices, decisions and practices. Teachers' and headteachers' professional behavior at the school level is, mostly, affected when the school culture content is evidently outlined on a certain accepted conceptualization basis. Taking into consideration findings of studies that correlate cultural strength with a positive effect on teaching efficiency, student motivation and student achievement, as they are discussed in Chapter 2, the current research wishes to assess the level of school culture strength in Greek public primary schools.

The homogeneity of school culture refers to the extent to which the same or similar assumptions and beliefs are shared by teachers and headteachers. The level of homogeneity, also, extends and is more visibly identified through the teaching practices adopted in everyday school life. When professional behaviors are formulated on the basis of the same or similar values and norms, school culture can be characterized as homogeneous. Potential heterogeneity of culture can imply cultural segmentation or differentiation. The existence of subcultures is, potentially, a more common reality, especially in times of change, when a number of the teachers and headteachers may wish to adopt different values, differentiating themselves from the traditionally held ideas and the prevalent school culture. For this reason, the current research wishes to explore the level of homogeneity of school culture in public primary education and to investigate the potential existence and evolution of internally homogeneous subcultures that may express and represent different values and beliefs.

1.3.2. Academic emphasis and practices.

1.3.2.1. Academic emphasis.

Where is emphasis placed in educational policy and practice? Is skill development emphasized equally to content knowledge?

The educational procedures that take place in the everyday school practice are allocated finite time and material resources. This, inevitably, raises the issue of which areas of student development will be given a priority within the context of the available resources. Content knowledge has, traditionally, been the emphasized area with teachers making these choices that would serve the aims of academic achievement and knowledge development. However, there has been a growing interest, lately, in the role of education in the development of the students´ skills and competences. The current research wishes to investigate the student development areas of emphasis, the extent to which content knowledge remains or not a priority in the system, and if, how and to what extent the development of skills is incorporated in current educational policy and practice.

1.3.2.2. The practices used.

What practices reflect the actual school culture?

Everyday school practices consist the surface level of school culture, through which values, beliefs and assumptions lying in deeper, more abstract and vague levels can become visible and understood. The meaning and importance attached to concepts and events due to shared beliefs, naturally, result in a systematic choice of actions and ways of pursuing educational aims that are very culture-specific. The variety of teaching and learning practices adopted can, also, give an insight of the values, abilities and skills that prevail in school culture, as well as those that education wishes to help students develop, providing a further approach to the study of educational aims and vision. The current research, further, wishes to investigate if the choice of teaching and learning practices at the school level takes into account the emerging skill needs proposed by researchers and organizations. The level to which teachers and headteachers adopt practices aimed at the development of these skills and competencies is expected to provide a picture of the predisposition of the current school culture towards change and innovation in primary education in Greece. Moreover, researchers hold that in the process of culture change, it is possible that deeper, less tangible levels of culture, such as assumptions and values, can be influenced through the management of the better

accessible and more visible level of practices. Consequently, the investigation of the practices adopted at the school level is considered of major importance within the context of school culture evaluation and change and is, thus, included in the research questions of the present research.

1.3.2.3. 21st century practices for the development of 21st century skills.

Does the school culture and the adopted teaching and learning practices promote the development of skills recognized as particularly important for the 21st century and to what extent? What kind of practices are used for the development of 21st century skills?

Organizations and researchers from the fields of education and employment, have, repeatedly, discussed the appropriateness of skills that are traditionally aimed at by education, for the work and general life conditions of the current century. Apart from academic knowledge, which has been long held of importance, throughout school organization, new skills arise as necessities for the contemporary students and future citizens and employees, which are, often, discussed under the term "21st century skills". Digital competency, information, media and general technology skills consist a new form of literacy closely associated with the life and work conditions of the 21st century. In addition, emphasis is placed on the development of life and career competencies, such as creativity, flexibility, initiative, problem solving, critical and divergent thinking, the development of which, however, is often hindered by traditional teacher-centered practices, rigidly defined school structures and the widespread use of standardized and summative testing. Social skills and especially cross-cultural skills are, also, highlighted on the basis of globalization and interdependence, where the ability to effectively interact and cooperate in heterogeneous groups attracts increased interest. The current research wishes to provide a list of examples of practices that aim at the development of such skills and are implemented in the context of the Greek primary education, as it is believed that sharing good practices can offer great benefits to the evolution of the educational system.

1.3.3. Value gaps.

Do educators recognize a value gap between the actual and the desired school culture? In which areas?

The identification of value gaps is regarded as a valuable tool in culture evaluation, especially within the process of school culture change. The current research wishes to investigate both the current school culture through the eyes of primary school teachers and headteachers, and their idea of what the ideal school culture would be like. The comparison of the findings can provide a picture of the gap between the two. Potential existence of a wide value gap in certain areas can contribute to the realization of a need for change. The recognition of this need is of major importance for many reasons. Firstly, in times of introduction of change, innovation and reform, it can assist in the management of resistance and the orientation of efforts towards the areas of school life that predominantly need reconsideration and enhancement. It is, also, particularly significant because it allows and systematizes a bottom-up suggestion of change and reform. At the same time, it constitutes an internal call for change and improvement based on a deep, clear and thorough insight that only people involved in everyday school life can have. As a result, it can greatly contribute to the successful introduction and management of change which can be motivated, initiated and planned internally through a bottom-up route.

1.4. Research Objectives

Based on the research questions analyzed above, under the three core conceptual areas, the objectives of the current research are formed as follows:

Cultural predisposition to change

1. To provide a description of the perceived aim of education with regards to the contemporary world conditions in the context of the Greek primary education.
2. To provide a description of core school culture values and beliefs with regards to the introduction of change in teaching in Greek primary schools contemporarily.
3. To determine the strength and homogeneity of the actual school culture.

Academic emphasis and practices

4. To investigate the areas where academic emphasis is placed within the educational system at the level of primary education (content and/or skills).
5. To collect data on school practices that reflect the existing school culture.
6. To identify teaching and learning practices that promote the development of skills recognized as particularly important for the 21st century.

Value gaps

7. To compare the teachers' and headteachers' perception of the existing school culture with their perception of the desired school culture and identify any perceived value gaps between the two.
8. To specify the areas with the widest value gaps that may require steps of action.
9. To provide suggestions for policy intervention in the aforementioned areas.

2. THEORETICAL FRAMEWORK

2.1. Education under the Circumstances of the 21st Century

2.1.1. New conditions, new purposes.

Change has always been the only certain and forever existing feature of human development. Heraclitus could not have said it better: “no man ever steps in the same river twice”. For it’s not the same river and he’s not the same man. People, societies, nature, the world change in order to evolve, to improve, to adapt or simply to survive. As human beings and as citizens we need to come to terms with the fact that we cannot avoid change, especially so in the 21st century when the river flows faster and faster.

To depict this speed of change, Thomas and Brown (2011) compare the pace in which two core technological advances have gained popularity in the present and the past century, the color television and the internet. In the first case, it took about 70 years from the first color signal in 1929 to the widespread adoption of the color television towards the end of the 20th century. In the latter case, the Internet has become a part of most people’s everyday life, in the developed world, in less than a decade, also followed by an explosion of social media. As educators, we cannot afford to disregard this reality and ignore change. Instead we should even wish to seek and embrace it, because, apart from the fact that education, as an integral part of society, must anticipate change as a certainty, it is, in fact, the only institution so closely related to the capability to bring about change and form the world of tomorrow. In Nelson Mandela’s words “Education is the most powerful weapon which you can use to change the world” and denying this reality cannot be a choice.

This, so inspiring and yet stressful, characteristic of education gives it its ultimate meaning but, also, puts a lot of pressure on the educators of today. Gordon Brown, former Dean of the MIT School of Engineering and a founding inspiration to the systems thinking in education movement, states that being a teacher, actually, resembles being a prophet, because teachers do not try to prepare students for the world of today, or the world that they, as individuals, have experienced, but, rather, for the future world, the conditions of which they can barely imagine (Hargreaves, Lieberman, Fullan, & Hopkins, 2009). It is quite enlightening to think that a child that starts kindergarten this year, 2018, will finish school after 2030. Taking into consideration the pace of change experienced in the past decade, one can realize how hard it may be

to visualize the world at that time and decide now what skills will be useful for that future individual, professional, citizen. Apart from an area for skills development, though, education is widely recognized as a core determinant of social and economic future progress at both an individual and a collective level. What is special about education is that, as far as these goals are concerned, it is a social institution with a half century-plus time horizon. Industry, government, the media might not face this condition so clearly, but schools do because they must prepare the citizens of today for the world of tomorrow, a world that has already started to form itself as a global village.

Zajda (2010) claims that globalized political, social and economic systems coupled up with competitive market rules that have led to a massive growth in the knowledge generation, management industry and information communication technologies (ICT), already, have a profound effect on educational institutions. The potential consequences of the so-called "New Machine Age/ 4th Industrial Revolution" for the individuals are widely discussed with regards to their implications for educational systems and the question of what the reaction of education should be under the circumstances (Martin, 2018). The conditions for policy-makers and educators change and concepts that have, traditionally, been taken for granted, such as knowledge, information, ability and achievement are challenged.

It is, also, a concern that if, contemporarily, mere academic achievement is a core priority in education, linked with a widespread use of standardized testing and emphasis on the accomplishment of academic criteria, that can get a student in a prestigious high-rank university with the aim of him/ her getting a high-paid job, then education may fail to achieve its ultimate aim of guiding students towards the accomplishment of their individual potential and the development of those skills that will allow them to positively contribute to the evolution of the local and global community. A review of the history of education can give an insight on how educational conditions that place specific emphasis on academic achievement and fact knowledge have developed. Since no formal public education system existed before the 19th century, this prioritization, that, often, characterizes contemporary education, finds its roots on the fact that the current educational system and its purposes have been designed on a clearly defined idea of academic and professional ability that conformed with the dictations of the industrial revolution (Robinson, 2007). Consequently, since the aims and purposes of

the educational system guide the formation of its identity, educational practice develops accordingly.

Robinson (2013) states that educational systems have four core purposes, the economic, the cultural, the social and the personal one. Starting with the first of the four, it is a fact that education is closely related to the world of work and the professional development of the individual, as well as the wider community. Skills developed within education are seen as a key factor for professional success, as well as personal and social well-being (Martin, 2018). Countries invest in education on the expectation that it will contribute to their long term economic well-being and sustainability. The problem nowadays, as described above, is that although imperatives in the world of work have changed, education has not. The IBM 2010 Global CEO Study included interviews with 1,541 CEOs, general managers, and senior public-sector leaders representing different types of organizations in 60 countries and 33 industries. The findings of the study revealed that in the business world, what is held of importance today, more than rigor, management discipline, integrity or even vision, is creativity, an ability much underestimated in the conditions of the industrialization imperative. (https://www-03.ibm.com/press/us/en/pressrelease/31670.wss). Robinson (2010), discussing creativity, highlights the importance of divergent thinking, the "ability to see lots of possible answers to a question", and alarmingly argues that school teaches children away from this ability. According to research findings that he presents, 98% of kindergarten children achieved genius scores on divergent thinking tests. The same children achieved much lower scores after some years in formal education and their experience in a schooling paradigm that leaves space for only one correct answer.

For Thomas (2012), the unfortunate exile of creativity, imagination and passion away from the classroom is closely related to the widespread use of standardized testing and the obsession with academic achievement. Teachers often report that in such an environment, there is no time for imagination. Furthermore, the messages they receive from the obsession of education administration with procedures of continuous testing is that they are not trusted. Even more importantly maybe, the widespread use of standardized testing seems to be linked more with surveillance rather than accountability and learning outcomes, with the ultimate goal being normalization, treating every single student just like every other student but also every teacher just like

every other teacher. To one that might mistake this for fairness, Einstein would respond that "everybody is a genius but if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid".

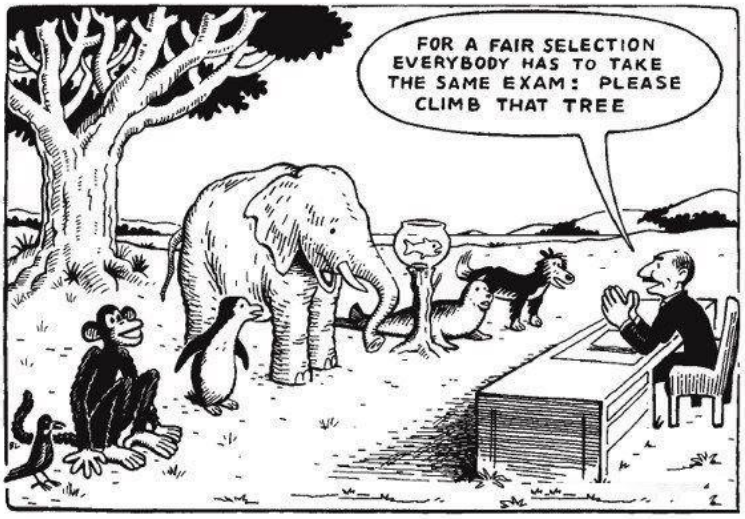

Figure 1. "Fairness" in the educational system.
(http://windmillsofmymind.weebly.com/everybody-is-a-genius.html)

Within the context of the discussion of the role of education as a field where students´ prepare for the professional world, the Organization for Economic Co-operation and Development, the mission of which is "to promote economic growth, prosperity, and sustainable development" through the cooperation of its 34 members, Greece being one of them since 1961, suggests that the educational systems of today ought to empower students with new competencies that will make them capable of taking on jobs that may not even exist today (OECD, 2018). Particular emphasis is, thus, given to competencies related to change management, as well as to the efficient and creative development and use of new technologies (OECD, 2018). Schools, however, typically manifest a tendency to focus on content knowledge development which is, mainly, related to mere academic achievement. "Soft skills" held valuable in the contemporary market are often disregarded as teachers are rarely prepared, trained or encouraged to teach them (Wagner, Murphy, & De Korne, 2012). Whatever the competencies in question, there is evidence that education may not achieve its goal of preparing the students for the professional sector. Data from Greece, in particular, show that a great number of firms report a difficulty in finding candidates with the right skills for their vacancies (OECD, 2018).

Another aspect of education is related to deeper issues of human and social development rendered of crucial importance if a contribution is to be made to the more basic needs of a society, where reorientation of priorities is considered an urgent necessity (Senge, 2009). This discussion over the priorities of education is not a new thing, however. Since decades ago, and the first profound technical advancements, scholars reflected on the danger of the world dehumanization. Back in 1972, in a period when technological progress was only starting to affect human lives, still at a very low level compared to nowadays, the Faure Report rang the bell that education was more "utilitarian than cultural" (Hargreaves et al., 2009). The need for a better understanding of the importance of building a more human world through new values, self-awareness and sensitivity remains a reality, probably an even greater one, today, as well (OECD, 2018).

A report published by Delors (1996) for UNESCO presented four recommended pillars for the education of the new century: learning to know, learning to do, learning to live together and learning to be. The last one, in particular, is closely related to the ultimate purpose of education, the personal one. Taking into consideration that education is all about people, one can realize how incongruous a results-obsessed mechanistic approach based on conformity is. What is a basic truth about people, and, consequently, students as well as teachers, is that we are all different, physically and mentally, in terms of appearances, personalities, beliefs, skills, weaknesses, needs (Robinson, 2013). Diversity is the only way we can actually be, and education is the environment where students can learn how to be in the richness of diversity. However, Zajda (2010), expresses his concern that, even a decade after the publication of the report, truly understanding and effectively applying these four concepts, and especially "learning to be", in the classroom practice remain a challenge. They are, however, all the more important in the context of the multicultural, heterogeneous societies of the 21st century where the co-existence of different values and cultures results in tension, disorganization and conflicts. In this context, the school holds responsibility for developing those skills in students that will prepare them to face complex social and cultural challenges both at the individual and collective identity level (Zajda, 2010).

Even if the technological revolution is the most visible sign of the times with the

characteristics of the "New Machine Age/ 4th Industrial Revolution" being under discussion lately (Martin, 2018), education has also been charged with a more essential core responsibility, that of constructing a culture of peace and tolerance in a world of constant political, social, geographical, economic and conceptual changes and conflicts. The cultural purpose of our schools is to help students develop their conceptualization of the idea of culture in its depth, the processes that form value systems, the way we have been raised to take some things for granted, the realization that this is not the same for everyone in this world, the ability to accept and respect what is not the same with us (Robinson, 2013). Education is held responsible for creating a new human mentality that will not perceive cultural diversities and differences as a threat to one's identity and being but, rather, as a source of richness and beauty. UNESCO points out that our very survival may ultimately depend upon our success in confronting this challenge. (http://www.unesco.org/education/educprog/brochure/003.html).

Bridging the personal and cultural purpose of education with the social dimension, Horowitz et al. (2005) argue that formal education should aspire to guide children through their developmental progress in a way that will facilitate them in finding and taking their place in society. Schooling ought to guide students towards the development of these competencies that will allow them to make a positive contribution as society members. According to Zajda (2010) the education of the present and the future needs to set new goals, focusing on the development of an identity of a responsible and effective national and global citizenship in students, with all the knowledge, skills, and attitudes that this may require. The social purpose of education is, through the embodiment of practices of participation, to engage this and every generation in the processes in which not only local, but also global communities are organized, especially in this period of time when disengagement becomes all the more common (Robinson, 2013). However, scholars highlight the limited space scope of contemporary schools arguing that the schools that we have inherited in the twenty-first century, even when they address citizenship skills, they fail to address global citizenship, as they have been organized and designed within clear national boundaries and with distinct national economic, political and social purposes as their core focus (Green, 1997, & Spring 2002 in Zajda, 2010). They have been prepared to function in a world where thoughts and actions are affected and affect only, or mostly, the area one lives in rather than the contemporary global village of the butterfly effect.

Interdependence is a notion that is increasingly discussed as its importance and impact on contemporary human lives is currently being discovered. Contemporary education has a new challenge to face, it must aim at the development of a generation of people who will be able to comprehend the aspects of interdependence and evolve within it, a generation of "systems citizens" (Hargreaves et al., 2009).

2.1.2. Discussing Learning- Learning in the 21st century

Learning is considered to be a decisive factor in every person's life course. It is a process that happens in a variety of contexts, places and moments. Structured education and formal schooling are recognized as one of these contexts that can make a huge contribution to human learning and provide a gateway to individual opportunity. As such, it is, also, recognized as a fundamental human right. UNESCO, however, highlights that although the benefits of education for global, national and individual progress as well as for social and health stability, are widely recognized, it must not be disregarded that for these benefits to accrue, children in schools need to be, actually, learning (Learning Metric Task Force, 2013). This, apparently, points to the fact that education and formal schooling does not necessarily equal learning. In fact, the problem of teachers teaching but students not learning remains diachronic (Koutselini, 2008). It is recognized that for enhanced student learning to be achieved, more good teaching in more classrooms most of the time must be ensured (Dufour & Mattos, 2013, in Lewis Asberry, DeJarnett, & King, 2016).

2.1.2.1. Learning paradigms.

So, what is "learning"? Theorists and researchers have been studying the term and its related concepts for a very long time, entangling into discussion of the hidden processes of learning, where and when it happens and what can be, actually, learnt and subsequently taught. Discussion has resulted in the development of core learning paradigms, with the first concretely theoretically supported of them being Behaviorism. With Pavlov's dog being the protagonist of the paradigm, "behaviorists hold that only observable, measurable, outward behavior is worthy of scientific inquiry" (Bush, 2006, p. 14). Consequently, they approach learning through changes in behavior, which are caused by external stimuli and can be explained without the need to consider the learners' internal mental states. Behaviorism builds on the underlying assumption that all learners gain the same understanding of things and that all students can manifest the

same response, provided that they are exposed to certain stimuli, reinforcement or punishment (Webb, 2007).

As research delved into unobservable areas in the fields of psychology, anthropology, linguistics, philosophy, neuroscience and computer science in mid-19th century, emphasis shifted on internal mental processes such as thinking, memory and problem-solving. Researchers felt challenged to open and explore the black box of the brain to study the mechanisms of cognition. The extensive study of cognitive development by the psychologists Jean Piaget and Lev Vygotsky formed the basis for the development of Cognitivism. According to Piaget, learners need to construct new knowledge on top of prior personal experiences in order to be able to create mental images, which means that the teacher ought to motivate students to create their own knowledge on the basis of their individual experiences. Vygotsky adopted similar assumptions, particularly highlighting the social context of learning through his theory of the "Zone of Proximal Development" (Rummel, 2008). He suggested that learning outcomes are enhanced on realization of the function of the "Zone of Proximal Development" which is defined as "the distance between the actual development level, as determined by independent problem solving, and the level of potential development, as determined through problem solving under adult guidance or in collaboration with more capable peers" (Shabani, Khatib, & Ebadi, 2010, p.238).

The Information Processing Theory, which was formed within Cognitivism, pictures the human brain as an information processor. Knowledge lies in meaning created through the process of acquiring, storing, retrieving and using information. Learning is approached through the perspective of the transformation of the internal cognitive routes followed by a novice compared to these followed by an expert. Cognitivist Constructivism highlights the concept of meaning, as well, proposing that each individual constructs his/ her personal understanding of the world. New information is perceived through connection with previous knowledge and experience. The learning environment is given heightened importance, as learning is viewed as a social activity that is essentially contextualized (Bush, 2006).

Focusing on human needs and interests, Humanism developed on the assumption that people form their behavior on intentionality and values, rather than on the expectation

of consequences proposed by behaviorists or information processing suggested by cognitivists (Kurtz, 2000). Learning is more of a personal act to fulfil one's potential and, as such, is closely related to issues of motivation and goal-setting. The purpose of the education is to guide students toward their personal growth and development into life-long, self-directed learners. The teacher's role is to be the facilitator of learning in a student-centered, cooperative and supportive environment, where the student is perceived as a whole. According to Huitt's (2009) Systems Framework of Human Behavior, the teacher's role in humanistic education focuses, in particular, on the development of the "regulatory system", the processes of linking the external with the internal environment of the student and his/ her knowledge and feelings with action, and the "affective/ emotional system", which processes and modifies information acquired through the "regulatory system". With reference to these systems, Gage and Berliner (1991) present the following basic objectives of the humanistic approach of education:

- The promotion of positive self-direction and independence (development of the regulatory system);
- The development of the ability to take responsibility for what is learned (regulatory and affective systems);
- The development of creativity (divergent thinking aspect of cognition);
- The development of curiosity (exploratory behavior, a function of imbalance or dissonance in any of the systems);
- The promotion of an interest in the arts (primarily to develop the affective/emotional system).

As theory profoundly developed around the concepts of learning, educational researchers as well as policymakers and practitioners started to realize all the more clearly that there was a need for theoretical knowledge to be linked to everyday practice, a realization that led to the evolution of the Design-Based Research (DBR) methodology around the turn of the century. DBR's goal is to bridge the chasm between educational theory and practice through analytical techniques that form a methodology for understanding how, when and why educational innovations are successful in their implementation. For Anderson and Shattuck (2012) a quality DBR approach is characterized by:

- A real educational context
- Focus on the design and testing of a significant intervention
- Mixed methods and a variety of tools and techniques
- Multiple iterations
- A collaborative partnership between researchers and practitioners
- Evolution of design principles
- Comparison to action research
- Practical impact on practice

What gives DBR its major significance is that, beyond designing and implementing innovations, the paradigm focuses on the reflection over the embodiment of theoretical claims about learning in every day practice, the study of the results of which, subsequently, provide a return contribution to further development of the theoretical basis.

2.1.2.2. Learning approaches and contexts.

Despite researchers' long and arduous efforts to define learning, it is still recognized as a highly complex issue encompassing a variety of different foci, perspectives, values, purposes, target skills and environments. Depending on the approach to the concept, different aspects are investigated, and different research results are manifested. According to Bransford et al (2006), the concept of learning is approached through three distinct research areas: implicit learning and the brain, informal learning and formal learning. Implicit learning has research value because it takes place in a great number and variety of learning situations of both formal and informal type, where new knowledge is built effortlessly and most of the times unconsciously. The term encompasses skills, language learning and social cognition, which are often developed with the aim of adapting to the environment one lives in, simply through the process of existing and acting within this environment and on the time scale of one's lifespan (Howard & Howard, 2001). It must be noted that a substantial part of learning through media and information technologies is implicit.

Informal learning refers to learning that takes place either in designed, non-school environments or in settings lacking a sustained planned educational agenda and in emergent learning situations. One can recognize the importance of informal learning if

he/she takes into account the fact that the major portion, over 90%, of people's activities throughout their life take place outside school. Even during school years, the percentage remains essentially high, at 79% (National Research Council, 2000). Bransford et al (2006) argue that informal learning has not enjoyed much research interest, a reality that is not aligned with the significance attached to prior knowledge brought to formal learning contexts by the constructivism paradigm. It arises as a necessity that deeper understanding of the resources that students bring at school is achieved, in order for meaningful subject matter learning to be facilitated.

Formal learning, finally, is learning that takes place in designed settings where an educational agenda is applied, this definition mostly pointing to schools. Discussion of formal learning, most often, spins around three areas of concern:

- What knowledge and skills we want our students to develop
- What is known about the processes involved in facilitating the achievement of these goals
- How we know if these goals are achieved

What Bransford et al. (2006) suggest in their discussion of the three different research approaches to learning is that it is time for a synergy among different traditions of learning theorists. If benefits are to accrue for the better conceptualization of learning, researchers need to be open and prepared to share methods and research tools and entangle in meaningful discussions, in order to find "conceptual collisions" that can provide a deeper, more thorough understanding of the multiple aspects of the concept and uncover its hidden spots.

Another classification of learning situations is provided by Wagner et al. (2012, p.17) who combine the dimension of learning contexts with that of learning processes, namely "the cognitive and noncognitive behaviors or skills that occur within individuals as acquisition occurs". The combination of the two dimensions results in the identification of four distinct learning situations:

- Highly structured processes in formal contexts, the school classroom with the planned curriculum, textbooks and trained teachers being the core example of this learning environment.

- Highly structured processes in informal contexts, such as educational programs in non-school settings, where structured educational approaches are the norm.
- Unstructured or informal processes in formal contexts. Informality is used here as an expression of learning that is not directly teacher-driven and is, often, unrelated to the structured curriculum. It is recognized that a great portion of new knowledge is built through informal channels at school, peer interaction being one of the most important of them.
- Unstructured or informal processes in nonformal contexts, which points to the multitude of learning contexts from parental speech to the interaction with media.

2.1.2.3. A new culture of learning: A shift in educational metaphors and a new role for the teacher.

Learning is an inherently dynamic process. The conceptualization of learning, along with its processes and contexts, is a shifting target reflecting the innumerable and constantly changing social, political, technological, economic factors that affect everyday life at a personal, national and global level and have an impact on the individual learner, as well as on the institution. It is a necessity to realize that changing social conditions pose an urgent need for new ways of understanding and approaching learning in order for better solutions to be achieved in the future (Wagner et al., 2012). This may, in cases, mean that as educators we should be prepared to challenge even our most basic and long held beliefs about education, schooling and learning. The writers of the UNESCO report "Toward Universal Learning", wishing to make recommendations that will be relevant to contemporary education for the next 15 years, consciously use a broad definition of the terms "school" and "classroom". Recognizing the constant development and current spread of online and experiential programs, they choose not to limit the two concepts to the spatial and time conceptualizations traditionally held of them. This might ring a bell that in the not-so-far future, even the most basic structures of education might be very different to what we take for granted and that there is a need for a rather more flexible approach to education. Especially so, if education wishes to embrace innovation, it is essential that previously acquired knowledge and skills might have to be "let go", despite the emotional consequences of

uncertainty and disconfirmation inevitably arising in the process (Bransford et al, 2006).

Thomas and Brown (2011) argue that, currently, knowledge is still approached in a mechanistic manner. Learning is seen as a series of predetermined steps deemed necessary to make the "machine" function, with the ultimate goal of efficiency, namely maximum information absorbance in minimum time. In this context, standardization and frequent testing, with all its drawbacks aforementioned, gains rationale. School leaders are reported to argue "we can't change our grading policy – it's part of our culture" (Douglas 2007, p.92), instantly turning our attention to those assumptions and conceptualizations that give a school an identity and a reason for existence, and their major influence on any attempt for change and reform. Moving away from the industrialization imperative, educators of all levels, and policymakers might have to consider steering away from the mechanistic approach, which focuses on results through predetermined steps and set processes, to learning rather perceived in terms of an environment, a context which combines multiple resources and involves all its stakeholders (Thomas & Brown, 2011). This is a place where students and teachers coexist not only with each other, but also with information, in a conversation that shapes and reshapes all parts. Environments do not break down, as machines do, neither do they require fixing through replacement of defective parts for the sake of improvement, a process that seems reasonably threatening to the eyes of its "cogs", the teachers and students, and expectedly leads to frustration and resistance to change. Environments grow in an organic way to integrate arising changes that are perceived useful for their evolution and to blend with other external or broader overlapping environments.

The importance of the assumptions held with regards to teaching and learning is highlighted because they are believed to have a great impact on the formation of the educators' viewpoints, as well as on students' learning (Glaze, 2018). A shift in educational metaphors from an industrial, manufacturing model built on the concept of linearity to a model inspired by agriculture and the imperative of the organic brings the realization that educators do not have, and should neither, assume the power to control and predict exact outcomes of human development, rather, as "farmers" they should focus on the creation of the conditions needed for their students to "flourish" (Robinson, 2010). Such an ecological approach, also, highlights the fact that all people involved in

school processes, such as headteachers, teachers, families, students, administrators, counselors, cleaning staff contribute to the creation of a learning context which can provide improved conditions for the development of the students' skills, social cognition and the achievement of educational goals (Horowitz et al., 2005). The behaviors and attitudes of everybody involved determine the culture of the school and have a great impact on student motivation and achievement and the quality of the education offered, in general. As a result, it becomes obvious that when the objective is to change and improve educational outcomes for students, what is needed is a holistic investigation of the ecosystemic framework of learning and a change in the interactions among all the parts of the system that are ecologically connected. Such a shift in perspective may make people involved in education see change under a different light.

Thomas (2012) suggests that the new culture of learning for contemporary education should be based on three core lines that are combined under the notion of "play", these being: engaging passion, imagination and constraint. It is understandable that a passionate learner is a motivated learner that will devote time and effort in discovering what he desires to know. When one is excited by what he or she does, even time takes an entirely different course (Robinson, 2010). Passion naturally creates interest, and educators know that the importance of its existence in the classroom is evidenced more vividly by the difficulties arising when there is a lack of it. Imagination, as the ability to perceive concepts in many different ways, to challenge the shape and function of things, to create something from nothing, develops on a basis of freedom but thrives when combined with constraint. Rules provide imagination a framework and obstacles a reason for existence. Constraint is just as important as passion and imagination because it provides a challenge for the mind and the body. It is, also, of essential significance in education because it reflects reality. Very rarely, if ever, in real life is one able to do anything they want, with the use of any resources they require, at any time they prefer and in any place they like.

In this new culture of learning, the teacher cannot sit on a high stand resting on his self-assumed expertise and this is, probably, one of the scariest changes expected from contemporary teachers. It is an undeniable reality that in the digital era of readily available and almost limitless information, teachers that insist on fighting against information search machines over who knows more are certain to lose the battle every

single time. This is not, merely, a matter of quantity of information available. Digital availability also results to the liberation of education from a specific time and place. Learning can take place in the park or at the nearby café and, presumably, at any time of the day or night one feels the urge to discover something new. It is freed from the formality of the process toward a rather more informal, implicit interaction with information. At the same time, free access to information resources of many types, videos, articles, graphs, presentations, hard data, easily achieves a long pursued and much discussed objective of formal education, personalization to individual or social needs and conditions, even those ones arising instantly.

This, by no means, signifies a diminishment of the significance of the teacher's role, it just asks for its reevaluation. It initially asks for a realization of the fact that the meaning of learning in the 21st century has shifted from memorizing and repeating information and knowledge to being able to find it and use it in real life contexts (NRC, 2000). If teachers manage to help their students develop such skills, guide them through this vast territory of available resources and information and bring a balance between the structure provided by formal education and the freedom afforded by technological media, they will make themselves and their work even more vitally necessary and valued. This is not a new concept in educational theory. Rogers (1951), the psychologist whose person-centered perspective found wide application in education and student-centered learning, mainly, through the Humanism paradigm, had, already, stated longer than half a century ago that a person, the teacher in our discussion, cannot teach another person, the student, directly. The former can, only, facilitate the latter's learning. This assumption was based on his personality theory, which claims that each individual responds to events according to his/ her perceptions formed in his/ her own constantly changing world of experience. In this world, the center is himself/ herself, the student in the case of education, and not the teacher.

According to Thomas (2012), the problem lies in the fact that teachers see themselves as "content", their main objective being to function as source of information that is not to be challenged or questioned. Teacher knowledge and expertise over subject matters is majorly valued and proposed as the core element in the teacher's role and identity within the school environment. For students of today, though, the teacher is more of just another "context" of knowledge among many others, smartphones, computers,

television, books and e-books, available for them in the process of forming their own "content" (Thomas, 2012). Consequently, core assumptions about the teachers' role, skills and work focus as well as about how things should happen in the school, in general, are challenged, shaking the very basis of existing traditional school culture.

It is, of course, undeniable that the teacher needs to possess a sufficient level of knowledge to be able to respond to the demands of his/ her role. It must be kept in mind, though, that by teacher knowledge we do not merely mean subject matter knowledge. Schulman has suggested a classification system of seven types of teacher knowledge since as early as 1986. This classification includes, apart from content knowledge, general pedagogical knowledge, curriculum knowledge, pedagogical content knowledge, knowledge of learners and their characteristics, knowledge of educational contexts and knowledge of educational ends, purposes and values and their philosophical and historical grounds (Lawson, Askell-Williams, & Murray-Harvey, 2009). The development of such multi-aspect knowledge enables the educator to adapt hard content knowledge to the needs of specific learners at a specific point in time and under specific conditions. Many categorizations of teacher knowledge that followed in time reflected a strong influence of Schulman's aforementioned categories (Borko & Putnam, 1996, Calderhead, 1996, Hill, Schilling, Ball, 2004, Darling-Hammond, 2006 in Lawson et al., 2009), to which Grossman added "knowledge of learning" to enrich the basis of understanding over the range of teacher knowledge (1995, in Lawson et al., 2009).

Bransford et al. (2006) similarly argue, that teacher knowledge is centered on four main areas: expertise and subject matter knowledge, the learner, the community and assessment. They highlight that what is of core importance is that teachers develop "pedagogical content knowledge" that goes beyond mere content knowledge, even expertise, in a subject matter. This is especially significant because it encompasses an enlightening understanding of what learning processes novices employ in their attempt to handle and integrate new information. Combined with emphasis on the learner, the connections he/she makes between new and prior knowledge and his/her metacognition processes, such as attention, short-term memory, storage and retrieval and others, this approach can enhance teaching outcomes. These, expertise and learner knowledge,

remain, though, only a part of a framework that is also characterized by community-centeredness and assessment-centeredness.

With regards to the role of the community in learning, it is found that effective learning communities are built on the secure feeling of mutual interest and care and the core assumption that members' needs will be satisfied through their commitment to cooperation and team work (Bransford et al., 2006). Research findings show that there is a strong correlation between social and academic achievement and that learning that takes place in a strong classroom and school community positively influences academic performance (LePage & Nielson, 2004). The heightened importance attributed to learning communities may find its roots in Vygotsky's theory, which states that culture and human interaction majorly affect developmental processes and that human development cannot be separated from its social and cultural context. The theory of the Zone of Proximal Development provides the framework for the potential benefits enjoyed in the social dimension of teaching and learning (Shabani, et al., 2010, p.238). According to Bransford et al. (2006), effective teaching presupposes an ability to employ the idea of the Zone of Proximal Development in the instructional processes in the classroom. Consequently, it becomes obvious that teacher knowledge of developmental processes is essential for understanding the internal processes of the learning mind, the ways students think and construct knowledge in the social context and their readiness for distinct learning activities and levels.

For the teaching framework to be effective, Bransford et al. (2006) add the fourth dimension of assessment. The utilization of formative assessment of outcomes and processes is essential in the pursuit of teaching and learning improvement, as it provides feedback on the successful or not so successful implementation of programs and theories. In the discussion of assessment, though, the issue that inevitably arises is the question of what is to be assessed. In current educational systems, assessment tend to focus on "efficiency", primarily measuring well learned routines and schema-driven processing, failing to address skills of flexibility, adaptability and creativity, the importance of which is repeatedly highlighted in the literature. Bransford et al. (2006) suggest an alternative to the "direct application view of learning and transfer" through emphasis on the assessment of students' "preparation for future learning", which

includes a set of content free general skills for learning in knowledge-rich environments at a lifelong time scale.

Within the norms and values of our existing educational culture developed in the previous century, the problem seems to be that the more profoundly our long-held beliefs of knowledge and learning are challenged, the more we resist to change. In his talk in TEDxUFM, Thomas (2012) mentioned a survey conducted with the participation of teenager students in New York. The basic question of the survey was how students learn outside classroom. Their responses pointed to smartphones, YouTube and Facebook. What the education administration of the city decided to do in response to this revelation was to ban the use of all three in schools, both for students and teachers. In Thomas (2012) words, it is fascinating "that kids are telling people 'this is how we learn' and schools are responding by saying 'you can't do this here". The idea that, as educators, we might not be in full control of what knowledge students access might be difficult to accept coming from a hierarchical educational culture based on top-down transitions of information. It remains, though, a reality that we can neither ignore nor resist, rather one that we would have to accept if we wish to be able to participate in its evolution.

2.1.3. 21st century skills.

2.1.3.1. A discussion of core 21st century skills frameworks.

The discussion of the concept of learning as process, as action and as culture under the contemporary conditions is inevitably intertwined with the discussion of its aims and objectives that go beyond mere content knowledge to, rather, a range of target skills and competencies. Within the discussed conditions of the 21st century, a new approach to the skills that are rendered essential for students in order for them to be able to experience academic and life success has evolved. Several educational and professional institutions have proposed relevant frameworks that include numerous skills and sub-skills, taking into account the current social and economic conditions. Six of the most commonly cited 21st century skills frameworks are presented in Table 1.

EnGauge 21st century skills (North Central Regional Educational Laboratory & Metiri Group, 2003)
Digital age literacy (basic, scientific, economic, technological, visual, information, multicultural literacy, global awareness), inventive thinking (adaptability, managing complexity, self- direction, curiosity, creativity, risk taking, higher-order thinking and sound reasoning), effective communication (teaming and collaboration, interpersonal skills, personal, social and civic responsibility, interactive communication), high productivity (prioritizing, planning and managing for results, effective use of real world tools, ability to produce relevant high quality products)
OECD (DeSeCo) (2005)
Using tools interactively (language, symbols, texts, knowledge, information, technology), interacting in heterogeneous groups (relate well to others, co-operate, work in teams, manage and resolve conflicts), acting autonomously (act within the big picture, form and conduct life plans and personal projects, defend and assert rights, interests, limits and needs)
European Parliament and Council (2006)
Communication in the mother tongue, communication in foreign languages, mathematical competence and basic competences in science and technology, digital competence, learning to learn, social and civic competences, sense of initiative and entrepreneurship, cultural awareness and expression.
Partnership for 21st Century Learning (2007)
Learning and motivation skills (creativity, critical thinking, problem solving, communication, collaboration), information, media and technology skills (information, media, communication and technology literacy), life and career skills (flexibility, adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, leadership and responsibility)
ATC21S (Binkley et al., 2012)
Ways of thinking (creativity and innovation, critical thinking, problem solving, decision-making, metacognition), tools for working (information literacy, ICT literacy), ways of working (communication, collaboration) and ways of living in the world (local and global citizenship, life and career, personal and social responsibility, cultural awareness)
UNESCO (LMTF, 2013)
Physical well-being (physical health and hygiene, food and nutrition, physical activity, sexual health), social and emotional skills (social and community values, civic values, mental health and well-being), culture and the arts (creative arts, cultural knowledge, self and community identity), literacy and communication (oral fluency and comprehension, reading fluency and comprehension, receptive and expressive vocabulary, written expression and composition), learning approaches and cognition (persistence and attention, cooperation, autonomy, knowledge, comprehension, application, critical thinking), numeracy and mathematics (number concepts and operations, geometry and patterns, mathematics application), science and technology (scientific inquiry, life science, physical science, earth science, awareness and use of digital technology)

Table 1. Most cited 21st century skills frameworks.

These frameworks, often, function as a basis for the discussion of educational theory, policy and practice in the relevant literature. It remains an issue, though, that this is a basis characterized by complexity and vagueness of terminology, also depending on the perspective of the composer of each framework. As a result, the potential ambiguity of the terms leaves room for various differentiated interpretations, which, consequently, affects the development of both theory and practice. However, it is recognised that although each framework uses its own terminology and categorization of skills, there are certain skills and competencies that are repeated throughout all frameworks. Studying the aforementioned frameworks comparatively resulted, thus, in the development of a compiled list that includes the skills valued by the cited authors and institutions, as is presented in Table 2.

creativity, divergent thinking, critical thinking, team working (especially in heterogeneous groups), work autonomy, developed cognitive and interpersonal skills, social and civic competences, responsible national and global citizenship, consciousness of interdependence, acceptance and understanding of diversity, recognition and development of personal attributes, interactive use of tools, communication in the mother tongue and foreign languages, mathematical and science competence, digital competence, sense of initiative and entrepreneurship, accountability, leadership, cultural awareness and expression, physical well-being.

Table 2. Compiled 21st century skills list

2.1.3.2. The discussion of 21st century skills in the context of primary education.

For the objectives of the discussion of the 21st century skills in primary education, they are categorized in four broad categories, namely personal skills, interpersonal and social and civic skills, knowledge and information management and digital literacy.

Personal skills.

Creativity is one of the most discussed 21st century personal skills. Creative production of results is the target (Martin, Nacu & Pinkard, 2016). The notion is, often, discussed alongside the concepts of curiosity and imagination (Wagner, 2008; Abdullah & Osman, 2010; Teruggi & Zuccoli, 2015), while Ejsing-Duun and Skovbjerg (2016), also associate it with playfulness. It is, further, related with the ability to innovate (Sheikh & Siti, 2016; Cruz & Orange, 2016). Romero, Usart, and Ott (2014) introduce the term "co-creativity" in the discussion of the skills of the current century, linking the

concepts of creativity and collaboration, thus, giving a more collective dimension to the concept.

Another set of skills comes under the term "problem-solving", the value of which is, especially, located in its application in authentic learning environments and the real world (Trinidad, Patel, Shear, Goh, Quek, & Tan, 2013; Heinrichs, 2016). Problem solving is related to analytical thinking as it requires the application of skills such as analysis and evaluation of evidence of whatever type, data, claims, beliefs and others, in order for the student to be able to provide solutions in the given challenges (Sheikh & Siti, 2016). Although conventional solutions are accepted, as long as effectiveness is achieved, the dimension of innovation is, also, valued (Cruz & Orange, 2016). Analyzing and evaluating accessed information is strongly related to critical and analytical thinking. Higher order thinking is considered as an essential skill for the citizens and employees of the 21st century (Alberta Education, 2006; Abdullah & Osman, 2010) along with sound reasoning, inquiry and the ability to make informed decisions (American Association of School Librarians, 2007; West Virginia Department of Education, 2009).

The development of the self is approached through a discussion of the skills of self-management (Martin et al., 2016), self-organization (Romero, Lambropoulos & Birwatkar, 2015) and self-regulation (Trinidad et al., 2013; Fisser & Thijs, 2015). The significance of self-directional skills is emphasized (Alberta Education, 2006), while Romero et al. (2015) discuss self-reflection as a competence deemed essential for contemporary students. The ability to apply independent thought in everyday life situations of every type is discussed as a target skill in the position statement of the National Council of Teachers of English (2008). In addition, being capable of acting autonomously with the aim of forming and conducting life plans and personal projects, defending and asserting rights, interests, limits and needs is highlighted by Ananiadou and Claro (2009). Particularly referring to the primary education context, Boyaci and Atalay (2016) highlight that for students' achievements in educational and professional life, these skills should be experienced at a very early age.

Recognizing the ever-changing nature of the world, especially in the given global change accelerated conditions of the current century, authors engage in the discussion

of skills that can help students fulfil their potential under the circumstances. Adaptability and agility are emphasized (Wagner, 2008) along with managing complexity and risk taking (Abdullah & Osman, 2010). Finally, emotional intelligence is thoroughly discussed within the context of the 21st century skills by Wilkens and Wilmore (2015).

Social and civic skills.

Communication skills are thoroughly discussed, sometimes in combination with collaboration skills and, often, located in the globalized environment of the 21st century. Skilled and effective oral and written communication is the target (Wagner, 2008; Trinidad et al., 2013; Teruggi & Zuccoli, 2015). In fact, communication and collaboration are given heightened importance as they are considered to be the gateway skills to the rest of the 21st century skills discussed, with code-switching perceived as an added-value skill for effective communication (Jacobson-Lundeberg, 2016). Although the mother tongue is given priority (European Parliament, 2006), multilingual communication gains more significance as years pass and globalization is becoming more of an everyday reality (Heinrichs, 2016; Mercuri & Ramos, 2014). This condition, further, poses the need for the development of the team working skills required for one to be able to communicate and collaborate effectively and organically in heterogeneous environments, where conflict management skills are, also, deemed essential (Ananiadou & Claro, 2009). Environments characterized by diversity are the new reality and developing the required open-mindedness that will allow one to work in them more smoothly and productively is a target (Heinrichs, 2016).

Global awareness is gaining more and more attention based on the recognition of the evolvement of the world as a global village, where citizens are affected by issues of interdependence, consequently including global citizenship in the discussion of the 21st century skills (West Virginia Department of Education, 2009). Cultural awareness and expression are seen as the first step (European Parliament, 2006) before reaching the level of being able to appreciate the value of varied cultures (Heinrichs, 2016) and construct intentional cross-cultural relationships and networks (National Council of Teachers of English, 2008). Leadership is, sometimes, included in the 21st century skills. Self- motivation and the ability to take initiative is regarded important (Wilkens

& Wilmore, 2015) and is discussed in combination with entrepreneurship and the ability to lead by influence (Wagner, 2008; Terrugi & Zuccoli, 2015).

Knowledge and information management skills.

The development of self-reflection and meta-cognition competencies are emphasized in literature as knowing how to learn is held to enhance learning results (Romero et al., 2015). Costes-Onishi and Caleon (2016) suggest that it is important for students to have the ability to assess their own weaknesses and to develop strategies for improvement. Balcaen (2008) discusses the concept of e-learning, which is becoming all the more common due to the evolution of technology and, thus, poses the need for the development of relevant skills that will make it an effective and meaningful process. Self-directed learning is another concept highlighted in research (Norris, Elliot, Chun Ming, Chee Kit & Akhlaq, 2013; Namsone, Čakāne, France & Butkēviča, 2016), since the ability to learn independently is highly valued in the current professional and social conditions (Alberta Education, 2006). Trinidad et al. (2013), also, discuss the notion of knowledge construction. Martin et al. (2016) discuss the dimension of social learning, while Rich, Jones, Belikov, Yoshikawa and Perkins (2017), as well as Cruz and Orange (2016) highlight the need for collaborative learning skills. Since the 21st century is characterized by a high rate of change and, inevitably, a sense of insecurity at times, the ability to take intellectual risks is, also, valued (Allmond, Hillman, Huntly, Makar & O'Brien, 2016).

Information management skills are, often, discussed in relation with digital skills, treated by some authors as a distinct set of skills and by others as a set of sub-skills of digital literacy. The interactive trait of information literacy is highlighted (Ananiadou & Claro, 2009). Being able not only to access and analyze data, but also to manage multiple streams of simultaneous information is deemed of high significance, as it is the basis on which the student can develop his or her skills of applying knowledge to new situations and, ultimately, create new knowledge (National Council of Teachers of English, 2008; American Association of School Librarians, 2007). Content knowledge is, also, discussed in the reviewed publications (Balcaen, 2008), although not much emphasis is placed on it, compared to other skills and competencies.

Digital literacy.

From the content analysis of the selected publications, it becomes clear that there is a clear emphasis on the digital feature of the 21st century. As a result, digital literacy ranks highest than all other skills in researchers and education stakeholders' interest. In fact, it is stated that the primary reason why 21st century skills differ from those of the previous century has to do with the emergence of advanced information and communication technologies (Shute & Becker, 2010, as cited in Boyaci & Atalay, 2016). A number of studies (Romero et al., 2015; Rich et al., 2017; Magen-Nagar & Peled, 2013; Henderson & Honan, 2008; Lohnes Watulak, Laster, Liu & LERN, 2011), a literature review (Romero et al., 2015), an overview of evaluative standards (Sharp, 2014), and two project descriptions (Karakoyun & Kuzu, 2016; Jensen, Paige, Sweredoski & Yanoff, 2010) have digital skills as their core focus, while almost all of the publications mention and discuss issues of digital literacy, in combination with the other 21st century skills.

In the discussion of digital literacy, which is the term mostly used by authors, a variety of sub-skills are discussed. Confidence in the use of media and ICT and proficiency in the use of digital tools are considered important (National Council of Teachers of English, 2008; Ofodu, 2012; Martin et al., 2016). It is, further, discussed that this relationship with the technology should be interactive (Ananiadou & Claro, 2009) with students developing the ability not only to access multimedia texts, but also to analyze, critique, evaluate and create new pieces of them, attending at the same time to ethical responsibilities, a topic also deemed important in such complex environments (National Council of Teachers of English, 2008). Lohnes Watulak et al. (2011), also, discuss the notion of a participatory culture in technology.

The 21st century skills discussed above as they are categorized under the aforementioned titles of personal skills, social and civic skills, information and knowledge and digital literacy are synthetically presented in Table 3.

Personal skills Self- development and autonomy (self-management, self-organization, self-regulation, self-direction, self-reflection, independent thought, autonomous acting, ability to form and conduct life plans and projects and to defend assert rights, emotional intelligence) Creativity (curiosity, imagination, playfulness, creative production, co-creativity, innovation) Problem-solving, critical thinking (in authentic learning environments, analytical thinking, analysis and evaluation of evidence, ability to provide solutions in given challenges, higher-order thinking, sound reasoning, informed decision-making, innovation) Presence in the globalized environment (adaptability, agility, managing complexity, risk-taking)	**Social and civic skills** Communication- collaboration (skilled oral and written communication in the mother tongue and foreign languages, team-working especially in heterogeneous environments, open-mindedness, conflict management) Cultural awareness, global awareness (ability to appreciate the value of the varied cultures and to intentionally construct cross cultural relationships and networks) Leadership (self-motivation, initiative taking, entrepreneurship, leading by influence)
Information and knowledge Learning (self-reflection, self-assessment, self-improvement, meta-cognition, e-learning, self-directed learning, independent learning, knowledge construction, social and collaborative learning, intellectual risks) Information management (information literacy, data access and analysis, managing multiple streams of simultaneous information, applying knowledge to new situations, creating new knowledge, content knowledge)	**Digital literacy** Confidence in the use of media and ICT, proficiency in the use of digital tools, interactive digital skills, critical use of digital tools (analysis, critique, evaluation, creation), ability to attend to ethical responsibilities required in complex environments, participatory culture in technology

Table 3. The four categories of the discussed 21st century skills

It has to be mentioned, at this point, that the categorization presented in Table 3 is hardly concrete as a number of the skills could, equally, be placed under one or more categories, depending on the interpretation of each term, which may depend on the context, the perspective or even the identity of the interpreter. As it has already been mentioned, the vagueness of the terminology adds to the complexity of the discussion of the 21st skills.

Further than that, the skills themselves are internally multi-aspect and multi-level concepts. Taking creativity as an example, although this might be placed in the personal

skills category, there are certain aspects of it that surpass the lines, such as co-creativity. This is, especially, the case with the higher levels of all discussed skills and competencies. For instance, communication is discussed as an essential 21st century skill, but includes several levels, starting from communication in the mother tongue, to skilled communication in the mother tongue, multilingual and skilled multilingual communication, communication in heterogeneous environments, communication in digital environments, result-oriented communication, innovation-oriented communication, and others. In fact, what gives the skill of communication its 21st century dimension is its combination with dimensions of other skills and competencies from the other categories. Consequently, the four categories presented in Table 3 could only be divided or, better-said, linked by interrupted lines, providing a better visualization of their essentially intertwined character.

Furthermore, it becomes evident that there are some issues that are transcendent, being treated as essential characteristics of the contemporary educational, social and economic context that determine the nature of the 21st century skills. It could be said that these refer, mainly, to the globalized character of the world, the evolution of technology and ICT and the need for innovation. New, emerging conditions posed by globalization give a certain dimension to each of the discussed skills and competencies. Educational stakeholders discuss the list of skills presented in the context of the particularities of an interdependent, heterogeneous, diverse, global environment. The discussion of skills such as team working and leadership, for example, is not a new thing in the education literature. What is new, however, is the fact that beyond being able to collaborate in teams or lead, the contemporary student, future citizen and employee needs to be able to do so in environments characterized by the challenges posed by diversity.

The advances in the information and communication technology are, often, treated in literature as one of the main characteristics that differentiate the current century from the previous one. The information explosion triggered by the development of the ICT poses the need for higher order information management skills (Ananiadou & Claro, 2009). The skills and competencies categorized under the term digital literacy are, probably, the ones mostly discussed and analyzed in the relevant literature. However, their presence in the discussion goes far beyond their concrete form to attributing a new

dimension to all the skills and competencies analyzed. Information management and learning, for example, have, always, been internal parts of the educational procedures. They gain a new dimension, however, since the nature of information itself has changed, posing the challenge for more advanced skills within a context of a critical approach to and synthesis of the vast volume of available information that can be approached through a great number of channels, at times, even, simultaneously.

A final concept that, often, appears in the discussion of 21st century skills is that of innovation. The discussion of the multiple aspects and levels of the listed skills and competencies in the particular educational, social and professional context of the current century evolves on the basis of the underlying need for innovation. The development of the skills by the individual bears no essence if it is not aimed at the ultimate goal of innovative creation at any level and field. This dimension may be, mostly, emphasized when the topic is approached from the professional perspective, where result-orientation is particularly emphasized, but is not limited only to that.

2.1.4. Synthesis.

For the biggest part of the past century, our educational system has put the teacher in the spotlight, perceiving knowledge as content that flew from this authority to students, most of the times in an unquestioned manner. With all the rapid change brought by globalization, new social structures, technology and information, and perception of knowledge in the 21st century, this model seems obsolete and ineffective. The new conditions demand a change in our perception of knowledge and education and a shift from the traditional model of teaching to an evolving model of learning as more and more research findings demonstrate that the traditionally held type of learning culture is no longer capable of producing the organizational results required (Lee, 2004). For education to maintain its value, there needs to be a shift towards a learning school culture that does not adapt to change but rather thrives on it, embraces it and creates new change of its choice (Thomas & Brown, 2011). Even more, there is need for a learning culture that will aim at developing skills for succeeding in change and the skill to change itself, because, as Rogers (1951) highlighted, “an educated person is one who knows how to learn and how to change”.

The discussion of the perception of learning through the decades, and with reference to different theoretical approaches points to the fact that learning is a vastly multi-aspect concept that can be approached through numerous different routes and on distinct conceptualization bases. What is more, it is encountered in diverse types throughout a range of situations and contexts. What is certain, though, of learning, is that it is never static. It follows the evolution of personal life and social conditions, as it is experienced both at a personal and social level, posing a need for teaching and education to do likewise. Traditional school culture, nevertheless, seems to show a preference for stability, that may result in inertia, rather than flexibility. In many cases, if change can be avoided it will be and adaptation will come in the case of enforced, unavoidable change. This, however, profoundly contradicts education's vision to prepare the children of today to be the citizens of the ever-changing world of tomorrow.

The definition of what is to be learnt in the context of this new learning culture is an important step that will guide subsequent decisions, policies and actions. The discussion of the 21st century skills has shed light to the range of skills and competencies that contemporary students may need in their personal, social and professional lives. According to the findings, authors seem to visualize the 21st century as an era majorly characterized by the evolution of technology and ICT, globalization and a need for innovation, consequently highlighting the need for students to develop relevant skills and competencies. It remains a concern for the author, though, that special attention should be paid to the maintenance of an equilibrium between the personal and social needs of the individuals and their result-oriented skill development, which is, mostly, related to professional achievement, especially in the context of the primary education.

2.2. The Introduction of Change in Education

2.2.1. From theory to practice.

All the aforementioned changing and evolving conditions bring education and its people face to face with new, unprecedented and, in cases, daunting challenges. According to OECD (2018), countries across the OECD and beyond are implementing reforms to build education systems that combine education with equity, aiming at a new range of skills for a more challenging, digital and multicultural global society. The enhancement of the student's achievement is the utmost objective of educational reform

initiatives in the majority of the cases (Ganon-Shilon & Schechter, 2017). The needs are profound and urgent but the ways to satisfy them are unknown and uncertain, making educational change a complex, vague and ever-changing territory and allowing the association of the term with many different meanings, processes and objectives.

As a result, educational change can come in a variety of forms, aim at and reach different levels and depths, focus on different aspects and have a range of results. It is undoubtedly affected by a great number of forces, unsurprisingly perceived in as many ways as the number of individuals involved in it. It may be treated simply as equivalent to something familiar or an extension of what is already known, it may wish to restore expertise in an aspect of practice from the past, adding skills and experience without much unpleasant sense of loss and insecurity. On the other hand, radical educational change may be fundamental, addressing the core essence of the institution, requiring a substantial reorientation of practice and organization and, as such, particularly disruptive to any sense of stability and familiarity (Hargreaves et al., 2009). For Robinson (2010), reform of education is not enough. Although, almost every educational system in the world is involved in a reform process at the moment, what education, really, needs, is revolution, rather than evolution. The real venture is to innovate fundamentally, challenging common sense and long held beliefs. In any case, although the change may inevitably break long held attachments to ways of thinking and working, it may at the same time launch a new and exciting endeavor.

Some scholars engage in deeper criticism of the approaches to educational change in what they call “mainstream education literature and policy”, which simply views schools as “learning organizations” and teachers and administrators as “change agents”, based on the concern that its propositions remain normative and politically neutral (Welner, 2001, p. 12). Every educational system has a very specific, although hard to map, unique structure and identity which is, also, characterized by different needs that need to be prioritized. Although careful planning, staff development, resources and leadership are believed to create an environment receptive to reform, general, politically blunt prepositions often associated with whole-school reform, are criticized as inadequate “neutral” reform approaches, that cannot achieve core systemic change and enhanced quality education in contexts with more specific needs, such as where equity-oriented reform is desired or needed, for example (Berends, Bodilly & Kirby, 2002 in

Renee, Welner, & Oakes, 2009). In such cases, the significance of personal development, with a focus on 21st century skills, is highlighted as a critical dimension of equitable education that can guide students to increased confidence, self-efficacy, and credibility (Jacobson-Lundeberg, 2016).

Taking the discussion one step further, Embry-Jenlink (2018) claims that teachers ought to develop their political voice and, even, make efforts to affect education-related legislation. They are charged with the responsibility to disrupt the notion of silence and apathy, promoting co-responsibility for social evolution, students' ability for raising voice, critique and active citizenship (Makrakis, 2017). The context and its particular conditions and needs is seen as a determining factor in the perception, planning and implementation of educational change.

2.2.2. Top-down versus bottom-up introduction of change- The importance of context.

In educational change, the situation seems to be that there are a lot of people ready and willing to tell teachers what to do and how to do it at the school level. Policies are perceived, designed and e-mailed to headteachers and teachers in forms of must-follow and one-fits-all guidelines. The unfortunate aspect of this situation is that policymakers, often, change positions in the system or, simply, leave it, before the outcomes of the suggested policies become obvious. As a result, they do not, practically, take responsibility for the results of their directions. In other cases, they may, even, seek to prevent fair and transparent assessment of the changes they promulgate (Mulford, 2009). This, inevitably, undermines the concept of "reciprocal accountability", which is held to lie at the core of the next generation accountability systems, putting emphasis on a proportionate distribution of responsibility to all parts of the system and a prioritization of collaboration (Patrick, Worthen & Truong, 2017).

Top down approaches to educational change have not been shown to bring the desired results in enhancing education quality. On the contrary, contemporary research worldwide on the topic of large-scale educational reform has exposed that systems and countries that promote bottom-up approaches, on the basis of trust to highly qualified teachers, combined with greater innovation in the teaching processes and a flexible curriculum are more successful educationally and economically than those wishing to

orchestrate every detail from the top. The example of Finland, in contrast to the widely adopted Anglo-Saxon system, is put forward in education literature. The Finnish education shares a vision where power is passed on to highly qualified teachers, who are allowed and encouraged to create local curricula for their students within very broad national guidelines and with minimal steering by the government. Educators enjoy high levels of trust and are only involved in school internal assessment for learning purposes (Hargreaves et al., 2009).

According to Saunders, Alcantara, Cervantes, Del Razo, López and Perez (2017), teachers should be perceived as people who can form, create and direct school improvement efforts, rather than merely implement them. The concept of teacher ownership, which they define as the teachers' sense of alignment with an improvement effort and the ability to influence it, is deemed vital under the circumstances of any attempted educational reform. Factors that increase teacher ownership include opportunities for teachers to co-construct knowledge, to lead school improvement initiatives and to work collectively towards systemic coherence. A culture in which key staff members share a sense of empowerment is linked to improved results and a more sustainable model of change and innovation introduction (Results for Development Institute & UNICEF, 2016).

Part of the failure, or limited effectiveness, of the top-down approach is attributed to the fact that it is initiated outside the context of the school, omitting its importance. Every educational change takes place in a unique context which is shaped and defined by a myriad of unstable variables and forces that can be strengthened or weakened, added or subtracted, increasing the complexity of the endeavor, transforming it into a battle over contextual turf. The procedure, often, develops on the basis of overlapping or contradictory interests promoted by policy makers at a national or local level, district authorities, councils, headteachers, teachers, parents and students (Ganon-Shilon & Schechter, 2017).

Welner (2001, in Renee et al., 2009), uses the term "zone of mediation" to refer to the context of change, arguing that with any change in the related forces the zone shifts towards being more hospitable or more hostile to reform. Similarly, the "co-construction" perspective proposed by Datnow, Hubbard and Mehan (2002) as the

extension of the mutual adaptation theory coined in the Rand Change Agent study views schools, as organizations, as embedded within successively contextualized levels (McLaughlin & Talbert, 1993). This means that people's thoughts, perceptions and actions cannot be separated from the context within which they develop. On the contrary, they take their meaning in a specific setting, to which they, also, give meaning. The interrelations between the actors of the system and the wider social and political forces shape the system dynamics and have a great impact on the implementation of any policy proposed.

Already in 1979, Elmore argued, in his "backward mapping concept", that policy is not the major influence that forms individual's decisions and behavior. In fact, decisions taken at the local level majorly affect policy implementation. In some cases, they can reshape, adapt, transform or even resist the designed intentions of the policy itself. The educators that put policy into practice at the school level turn out to be the final policy makers, as policy on paper goes through the filter of school "micropolitics" before becoming policy in practice (in Hargreaves et al., 2009). In fact, research in reform implementation results demonstrates that policies are rarely implemented neither as written nor as intended by their initiators (Porter, Fusarelli & Fusarelli, 2015, Rigby, Woulfin & Marz, 2016, in Ganon-Shilon & Schechter, 2017). This can, partly, explain why attempts to transplant reform designs, even undoubtedly successful ones, from one context to another, occasionally from one country to another, may only result in disappointment. Even with the example of the much discussed and admired Finnish educational system, criticism turns attention to the fact that the Finnish society is a lot more homogeneous than that of other countries, which inevitably affects the way the educational system functions (Hargreaves et al., 2009).

The idea that educational change can be centrally designed and planned in a detailed way and, then, locally implemented with guaranteed results seems to be no less than a fallacy. Innovative propositions may not bring the results intended, even if these have already been achieved in the past or in other contexts, due to innumerous variations in social, political, cultural, economic factors, or simply because the individuals that are invited to implement the change perceive it in very individual ways. Model schools cannot be replicated, and simple, follow-and-succeed guidelines cannot be listed, because schools are "living systems" rather than machines. Consequently, intensive

local collaboration is deemed vital if continued relevance of change and innovation is to be ensured (Results for Development Institute & UNICEF, 2016).

2.2.3. The micro-politics of change.

Looking at schools from an organic perspective allows the recognition of their core identity as a process of constant adaptation and evolution, that occurs naturally, in response to a strong desire for survival and growth. It shifts focus on the relationships formed within the organism, highlighting the importance of the shared sense of purpose that brings cohesion, the impact of information management in the system, of life-long learning, co-adaptation, co-evolution and receptiveness to change (Wheatley, 2005, in Mulford, 2009).

In fact, schools could be perceived as nothing else but "living systems" since they are formed by people who are deeply sentimentally involved in their processes. Teaching is a profession of high affective intensity and increased levels of anxiety. It is no wonder that it is recorded as one of the professions with the greatest fatigue and burn-out effect. Still, teacher emotions are often overlooked and understudied, and the reform process is approached as a rational, technical process, omitting the fact that feelings, either transformed into actions and words or merely existing in the mute area of the interrelations, have a great impact on all processes, relations, decisions and actions. Even the teacher identity is not a fixed map of skills, thoughts and processes adopted, but rather an interplay of emotions and actions (Zembylas, 2009). Inevitably, then, educational change is a deeply emotional sense-making experience for teachers, who may respond to it in a variety of ways, with some of them manifesting readiness to welcome and sustain reform efforts and some experiencing frustration leading to resistance (Datnow, 1998, Datnow & Castellano, 2000, Hargreaves, 1994, 1997, 1998a, 1998b, 2004, 2005, Lasky, 2005, VanVeen & Sleegers, 2006, VanVeen, Sleegers, & van deVen, 2005, Zembylas & Barker, 2007 in Hargreaves et al., 2009).

It is a certainty, though, that educational reform is a process associated with insecurity due to disturbance of long-held beliefs, unpredictability, occasional loss in self-image, tensions and even conflicts. Such negative feelings forming the psychodynamics of educational units need not to be feared, instead they need to be expected and, even, welcome as an integral part of the change process that can help in its evolution.

Providing teachers with emotional support is essential for them in cases when they have to take the risks included in coping with change. Allowing inevitable emerging feelings to be expressed and dealt with is of major importance not because it aims at helping teachers feel better against the pressure stemming from reform, but because it creates a space where these feelings can be reconciled and effectively integrated in the process (Schmidt & Datnow, 2005).

Micro-politics play, once again, a crucial role in the management of the psychodynamics of the constantly evolving, living educational unit. There is no doubt that school-based micro-politics pervade all aspects of educational reform processes and have the potential to promote or impede change, regardless of whether this is to be successful or unsuccessful. The use of positive micro-politics, such as empowerment, increased classroom autonomy and the development of collaborative relations by all stakeholders, including teachers, headteachers and administrators are generally thought to facilitate educational change. Especially, when educational change is addressed towards the improvement of teaching and learning, the creation of a collaborative culture and a feeling of shared responsibility within a professional learning community may be the most appropriate strategy (Lewis et al, 2016).

In general, successful school reform efforts tend to be facilitated by teachers' political participation in school-wide decision-making along with a reflective critique of the curriculum (Allen, 1993, Blase & Blase, 2001, Bredeson, 1989, Brimhall, 1993, Corbett & Rossman, 1988, Melenyzer, 1990 in Hargreaves et al., 2009). This is due to the fact that participation in decision-making increases the levels of acceptance and facilitates the implementation of innovations and the introduction of new processes (Armengol Asparó, 2001). Teachers are found to be more willing to apply policies if they have participated in the procedure of their formation, as their consent has been, already, asked before the moment of implementation. In general, teacher participation is decision-making is linked to enhanced cognitive and intentional readiness for change (Inandi & Giliç, 2016).

Still, when it comes to change, feelings of disorganization and insecurity associated with change, sometimes, tend to be dealt with through an exertion of increased and centralized control and pressure. Wheatley (2005, p. 4) argues that "in the past few

years, ever since uncertainty became our insistent 21st century companion, leadership strategies have taken a great leap backwards to the familiar territory of command and control". Scholars propose, though, that such negative forms of micro-politics impede rather than promote educational reform (Blase & Bjork, 2009). Thus, the alternative of answering to undeniably stressful feelings of uncertainty experienced with more flexibility, rather than with more control, should be carefully considered. The value of trust is highlighted, especially with regards to the development of collaboration and participation. In fact, trust is seen as the key ingredient that binds organizations, decreases friction and conflict, facilitates action and promotes openness to innovation through a feeling of security and collegial support (Hallam & Hausman,2009). Shea (1984, p.2, in Hallam & Hausman 2009) claims that there is "no substitute (to collegial trust), neither threat nor promise will do the job as well".

2.2.4. The role of leadership.

Whatever the context and the meaning attached to educational change, however, leadership is held as a decisive factor in educational reform attempts throughout literature and research. By definition, leadership is a process whereby some individual influences a group of people towards a shared goal. Traditionally, the task of education has been to guide students through a procedure that would transform them to adults able to effectively function and succeed within the culture and expectations of their time. Throughout history, and even more nowadays, proponents of educational change have encouraged educational units to alter and reform their core tasks and practices in the pursuit of the aforementioned task, posing challenges for educational leaders who are in charge of the orchestration of all different forces in their schools (Richford, 2001). Zajda (2010) highlights that strong leadership improves the chances for systemic improvement in teaching and learning. Maybe, this is the point that creates confusing and erroneous associations of what the term "strong leadership" means leading to anachronistic practices and bringing about the opposite results from those initially desired.

Positioning the discussion focus at the level of the school unit, the leader is the headteacher. Findings from studies indicate that, due to the complexity of their task, school leaders need to take up various key roles, they need to be initiators, facilitators, policy-makers, promoters of positive school culture and so on. For Richford (2001),

leadership, more than a position, is rather a fundamentally dynamic, complex, human relational process (Richford, 2001). It is understandable that, in order for the headteachers to be able to successfully support all these roles, they need to acquire a great number of skills effectively integrating both managerial and instructional responsibilities (Walker & Hallinger, 2015 in Ganon-Shilon & Schechter, 2017).

Especially, under the growing pressure posed by the recognized need for the transformation of the school into a dynamic learning environment, the role of the headteachers becomes even more complex (Fullan, 2014; OECD, 2016c; Pont, 2014, Schleicher, 2012, Sumbera, Pazey, & Lashley, 2014, in Ganon-Shilon & Schechter, 2017). According to Mulford (2009), school leaders have to be, first of all, contextually literate in order to be able to achieve balance between the competing forces in place during the educational change process. They have to be able to create a work, teaching and learning environment where conflicting concepts, such as continuity and change, dependence and independence, individualism and community, homogeneity and heterogeneity will co-exist in peace. They have to develop their organizational skills, integrating organic approaches, deep democracy ideas, participation and networking. They need to be leadership smart, realizing the importance of context and demonstrating flexibility between leadership styles. They are expected to invest time and effort in team-building, vision establishment and inspiration, the cultivation of leadership skills in teachers, the analysis of information and data to inform instruction in order to ensure that their schools achieve quality education standards while, at the same time, remaining updated and implementing reform guidelines (Gawlik, 2015, Mendels & Mitgang, 2013, in Ganon-Shilon & Schechter, 2017).

According to Hallam and Hausman (2009), especially in times of change, leaders must be able to create and sustain an environment of trusting relationships and collegial support through trust building processes, as well as through their own trustworthy behaviors. Lambert and her colleagues (in Ainscow, 2005), discuss the “constructivist leader” and his/ her role in the change process. This type of leader is one that can manage information, gather, generate and interpret it, with the aim of creating an “inquiring stance” that will result in a disequilibrium in thinking, challenging current assumptions about the school processes. Balanced information processing and transparent relationship management are core skills of the authentic leader, as well

(Karadag & Oztekin-Bayir, 2018). Such positive leadership styles, that place emphasis on relationship management and allow teachers' participation in decision-making are positively linked to school effectiveness and enhanced change implementation results. Above all, leadership is not a static process, it implies and requires continuous growth and development in character and effectiveness (Richford, 2001). No matter what the situation is, scholars agree that headteachers' skills, opinions, thoughts and feelings count because, above all, headteachers are role models and visionaries (Zajda, 2010).

2.2.5. Synthesis.

All the aforementioned evolving social, cultural, economic, global and local conditions pose new challenges for contemporary education. According to Senge (2009), the Industrial-Age education system that has been majorly adopted around the globe in the past 150 years will have to and will, actually, change dramatically in the not so far future, despite the fact that schools manifest high levels of inertia and resistance to innovation and, which are often related to fragmented and over-ambitious piecemeal initiatives. It is undeniable that as the world is changing all the more rapidly, education cannot resist change for the sake of safety and low risk. In the current conditions, letting education become obsolete is the highest risk of all. Stability and security can only be conceptualized internally as the basis on which the pursuit of change will be encouraged.

Honest, holistic, systemic change is essential because, as Mulford (2009) argues, whether inevitable global changes of any type result in "Frankesteins" or functional and sustainable evolution depends largely on the response of education to them. In this process, the leader, the follower and the context are the core structural dimensions determining the shape and evolution of educational change. Each individual's perception of the evolving conditions and his/ her engagement with them affect the collective metaphors guiding individual and collective action in the process (Richford, 2001). The engagement of all educational stakeholders is of great significance, with specific emphasis placed on students and learning, as well as the development of the teachers' capacity, aspects regarded as key factors education policy success (OECD, 2018).

It remains a challenge for the institution to find the way, in this world of massive and

never-stopping change, to help people and societies move ahead without losing their roots. The ultimate aim of schools is to prepare the children of today to be the citizens of a better world of tomorrow and the honest truth is that this is an unknown territory. As educators, we might not be sure of how we can achieve this aim. However, we can make the effort to discuss on and collectively try to achieve the core aims and targets, on the processes of learning, thinking and being that we hold of importance for the future citizens.

2.3. School Culture

2.3.1. In an attempt to define school culture.

The term "school culture" is one that has attracted much interest in education literature and research. Its meaning has been discussed since as early as 1932, when Waller recognized that in each and every school there are complicated rituals of relationships, folkways, a moral code and irrational sanctions, which are all completely and definitely unique to the particular educational unit (in Maslowski, 2006). Although, scholars engaged in the discussion of the conceptualization of the term for decades, they turned their attention to its core essence and related concepts when the discussion about educational progress turned to educational change and its barriers. It was then that the need for the details and hidden spots of culture to be discovered and studied became stronger, as scholars were trying to understand change processes in educational institutions. Interest accumulated even more when several studies and scholars identified a positive connection between school culture and student achievement (Goldring & Knox, 2002).

The result of this increased interest was a number of definitions and descriptions of a term admittedly elusive and complex. Maybe the simplest one found throughout relevant literature is the one describing organizational culture as "the way we do things around here" (Ouchi & Johnson, 1978 in Simpson, 2004). Although the definition looks simplistic, it describes the term pretty precisely and implies one of its very basic features, that through time the presence and influence of culture over people's thinking and acting, as well as all organizational processes, becomes invisible and taken for granted; it simply translates into how things naturally happen. It also points, through its simplicity, to the unconditional aspect of the existence of culture above individuals.

People can choose to join or not a culture but cannot create one and, in most cases, not even bring core change merely individually (Thomas & Brown, 2011). Instead, it is usually the case that the process works the other way around, with individuals eventually transforming themselves to the cultures they enter, learning to do things "the way they are done around here".

Saphier and King (1985), attempting to be more specific when discussing the culture of a school, refer to the concept of "shared beliefs" about the ways in which the school should operate and "basic values" reflecting what the school wants for its students. Similarly, Terrence et al. (1990, in Stolp & Smith, 1994) argue that the definition of culture includes "deep patterns of values, beliefs and traditions that have been formed over the course of history". Rokeach (1973, p.5, in Tal & Yinon, 2009) defines values as "enduring beliefs that a specific mode of conduct or end state of existence is personally or socially preferable to an opposite or converse mode of conduct or end state of existence". As such, they form the basis for specific shared tendencies, judgments, choices and actions. Values are emphasized, also, by Pang (1998, p. 315) as a representation of "the forces and processes through which organizational participants are socialized into organizations". For Pang, values lie at the core of organizational culture. Again, though, these beliefs, values and norms, which color the behavior and actions of the members of the educational unit are, often, unconscious and hard to map or communicate (Houtveen et al., 1996, in Maslowski, 2006). They are mainly approached and understood with reference to manifested attitudes, behaviors, words and actions.

Schein (1985) attempts to reach a deeper level of the term and adopts a psychological view of culture giving the definition of the term as "a pattern of basic assumptions - invented, discovered, or developed by a given group, as it learns to cope with its problems of external adaptation and internal integration – that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to these problems" (Schein, 1985, p. 9). Schein proceeded, also, to the description of the concept of culture through a three-layer model. According to this model, basic assumptions lie at the deepest, least visible level. They represent the fundamental questions people face, such as the nature of relationships and even human nature itself, concepts of reality and truth and others.

The way people approach these issues result in taken-for-granted beliefs and, as such, are pushed to the dark area of the unconsciousness until somebody or something challenges them. For Hall (1989, in McMaster, 2015), the deepest level of school culture is not a solid zone and should, rather, be seen as a dynamic area within which individuals express their core values in distinct ways.

In the second level, Schein positions values and norms. As mentioned above, values represent standards of desirability, what is held of importance by the members of the educational unit. Desired features, as a cultural aspect, are further related to expectations from the school and how teachers' feelings are developed and affected, influencing the way they do their work and their commitment levels (Demirtaş, 2010, in Parlar, Cansoy & Kılınç, 2017). Although, this second level, also, remains close to the unconscious, it is reported that most teachers, when asked to express their core values, can actually mention a number of them (Rossman, Corbett, & Firestone, 1988). Values, such as collaboration, respect, tradition or innovation, greatly affect decisions and actions as they are translated into behavioral norms, dictating what is to be done as well as what is to be expected by others. In the perception of schools as learning communities, sharing of values and norms among teachers is highly valued, as it is held to result in commonality of purpose and actions intended to improve the learning of students" (Cavanagh, 1997, p. 184, in Maslowski, 2006).

Towards the surface of the conceptualization of culture, lie the artefacts and practices, through which the two deeper levels, assumptions, values and norms become visible and tangible. Practices adopted in a school develop naturally from what is perceived as desirable and acceptable, often resulting in rituals infused with meanings that are very specific to the culture of each school and the importance placed on different aspects of the school life in the particular context. In addition, studying the surface reflection of culture through practices and process, Blood and Thorsborne (2005, p. 4) mention some cultural cues, which are listed below.

• How management, principals and headteachers, speak to teaching staff.
• How teachers speak about the management in their absence.
• How management and teachers speak about students and families.
• What the patterns of communication are in team work events, such as meetings and what is said immediately after a meeting.

• How criticism, disagreement and conflict are handled.

• In what ways the school invites, welcomes and supports initiatives and individual Vision.

• How the school responds to identified need amongst students or staff.

It is, often, argued that such cues are more easily identified by new team members coming from external professional environments. For the rest of the existing team, the way the above practices, as well as many others, develop is hard to realize and analyze, due to the fact that they are embedded in the unconscious, taken for granted level of thinking and acting characterizing school culture. This could imply that new team members or even external visitors in an organization might be able to identify and realize existing culture more readily and clearly.

Another thing that is worth mentioning with reference to Schein's description of the three levels, is that, if approached technically, it somehow leaves one with the impression that there is a linear connection with energy flowing up from the deepest layer of assumptions, through the middle level of values and norms to the more understandable level of practices. However, researchers in the topic hold that addressing issues in the two levels of practices and values can, actually, lead to changes in the deeper, less tangible level of assumptions (Goldring & Knox, 2002). As seen in Figure 2, influence moves through the three levels proposed by Schein in both bottom-up and top-down ways.

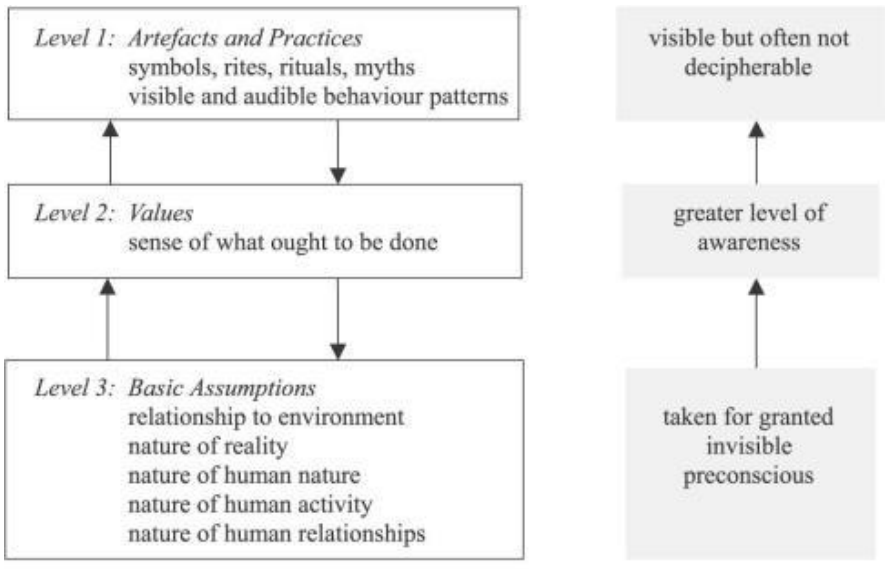

Figure 2. Schein's level of culture (Schein, 1985, in Maslowksi, 2006, p.7)

Taking Schein's approach one step further, Staessens (1991, in Maslowski, 2006) sees school culture as a reality constructed on a social basis, where the meaning attached to things, actions, statements and events is formed and communicated in an interpretative, social process. In this socio-constructivist approach, three domains are highlighted as areas of culture construction and manifestation, these being the principal as builder and carrier of culture, the level of agreement with regards to shared goals and the professional relationships among teachers. "If moral purpose is job one, relationships is job two" says Fullan (2001, p. 71) when referring to culture management turning the spotlight to the network of relationships developing within the professional context of a school and its impact on school processes and events. As relationships are formed on the basis of, as well as form, shared beliefs and values, in a two-way process, they become a reflection of the deepest level of assumptions described above and provide the soil for the roots of professional culture. Brown (2004, in Maslowski 2006), extends this basis to include, apart from internal institution relationships, links developing between institution members and the external environment, as well.

The significance of relationships is recognized in all systemic approaches to culture as, in this case, the school is seen as a "system" made up of distinct but strongly interrelated parts. Principals, headteachers, teachers, students, families, the community develop numerous relations among them, communicate their beliefs and actions, affect and depend on each other. The culture of the system has the power to assist or impede its smooth and effective operation and it is very important that it is developed through the members' collaboration on the basis of shared purpose (Snyder & Anderson, 1986). Specific reference to the role of the organizational members and their interaction in the formation of the school culture is made by Deal (2009, in Rauf, Ali, Aluwi, & Noor, 2014). In his conceptualization of the school culture, the headteacher is seen as a hero/ heroine who embodies core values, and the teacher as situational hero/ heroine. Similarly to other definitions of school culture, shared values and relevant rituals that express and celebrate the consensus of "how we get things done around here" are included in the definition of the school culture, while particular emphasis is given to the balance between innovation and tradition and between autonomy and control.

Apart from Schein's three levels and Staessens' three domains, one further attempt to break culture into smaller, better understandable pieces results in the identification of the following three aspects: content, homogeneity and strength (Kilman, Saxton & Serpa 1986). In this case, the term "content" includes all ideas described by the Schein's levels, namely the basic assumptions, the values and norms, and the artefacts and practices, giving the adopted culture a certain typology or dimension, depending on their combination, such as "collaborative" or "achievement oriented" for instance (Maslowski, 2006). The level of homogeneity implies to what extent the same assumptions, values and artefacts are adopted by all teachers. If professional behaviors are formed on the basis of the same, more or less, beliefs and norms, then the school culture can be characterized as homogeneous. This does not necessarily mean, however, that if not, the school culture is heterogeneous, as in some cases there appears the phenomenon of cultural segmentation or differentiation with distinct, but in themselves homogeneous, subcultures emerging across different departments or teams (Maslowski, 2006). In fact, this is more of the rule than the exception, as, according to Armengol Asparó (2001), every organizational department or professional group actually tends to develop its own subculture. Finally, cultural strength is described as the extent to which shared values and norms are clearly defined and expressed and the level to which these are enforced and influence teachers' behavior. Strong school cultures include clear, strong assumptions and norms that dictate certain professional behaviors. Studies of schools involved in reform processes have shown that cultural strength in combination with shared vision positively affect student achievement (Goldring & Knox, 2002).

2.3.2. School culture and enhanced educational outcomes.

Culture, with its features and levels discussed above, is closely associated with enhanced quality of school practice and achievement of goals and objectives. According to research findings, various aspects of healthy school cultures or climates demonstrate a strong correlation with a range of student outcomes, from academic achievement to reduced engagement in bullying and delinquent behaviors (Lynch, Lerner & Leventhal, 2013 in Lewis et al, 2016). Organizational commitment and job satisfaction (Canizo, 2002; Hatchett, 2010), cooperation levels and results (Horn-Hasley, 2007; Lima, 2006), organizational trust and organizational citizenship (Arli, 2011), work motivation (Tanrıversi, 2007), mental health (Yau Ho, 2010),

and empathy (Barr, 2011) are, also, some of the organizational achievements linked to positive school cultures (in Karadag & Oztekin-Bayir, 2018).

The type of culture that is developed, maintained or enforced in an educational unit can facilitate or impede attempts for success, improvement or change. Saphier and King (1985), being particularly interested in the link between school culture and school improvement, focus on behavioral norms reflecting teacher perceptions. The importance that they attach to specific norms, such as collegiality, expectations, trust, support, confidence, appreciation, involvement in decision-making and communication, stems from their belief that the strong presence of the particular norms can bring significant and continuous improvement in the school processes. According to their work, school improvement includes processes greatly affected by the existing school culture, some of these being the development of teachers' skills, the systematic discussion of the curriculum, the enhancement of organizational processes, and the involvement of parents and families in responsible school-community partnerships. Saha and Dworking (2009), also, support the centrality of trust as a cultural characteristic in school improvement processes, especially in the case of large scale reforms, when relationships undergo maximum pressure.

Similarly, when discussion focuses on the learning process and the learning outcomes manifested by students, namely in the perception of school as a learning community, school culture is analyzed on the basis of "beliefs, attitudes, values and norms about the education of children and the social interaction within school" (Cavanagh & Dellar, 1997, p. 4, in Maslowski, 2006). In this sense, the term is, once again, related to school improvement through specific factors such as teacher effectiveness, collegiality, collaboration, shared planning and transformational leadership, which, when combined, can contribute to the improvement of the student learning experience and outcomes.

Discussing teachers' productivity and effectiveness, Pang (1998) argues that a clear sense of direction stemming from specific values can lead towards achievement of the goals of the organization. Shared values, in Pang's view, signify "the binding forces that hold an organization together" (Pang, 1998, p. 315). They create a cultural linkage which, inspiringly, adheres meaning and increased importance to everyday work at school. This coexists with the formal and prescriptive framework of the

bureaucratic linkage, which includes roles, rules, set procedures and rigid control over the professional behavior of the organization members. According to Yin Cheong Cheng's (1993) early study of effective and ineffective organizational cultures, teacher motivation, job satisfaction and productivity increase in environments with strong organizational ideologies, where procedures evolve through shared participation and intimacy and are guided by charismatic leadership. Latest research has, also, revealed a positive correlation between cultures with high levels of trust and school effectiveness, highlighting once again the need to focus on the development of the values of collegiality, respect and support, in order to achieve organizational changes that can lead to improved educational outcomes (Kochanek, 2005, in Hallam & Hausman, 2009).

When it comes to the introduction of change, school culture can be a determining factor in the success or failure of any proposed innovation, sometimes regardless of the quality of the suggested program. Markoff (2014), in her discussion of the introduction of blended learning in schools presents three questions for consideration before the particular venture:

1. Is the school flexible?

Introduction of blended learning in a school culture that does allow teachers to act innovatively in a context of freedom and trust and experiment is unlikely to bring the desired results.

2. Is the school committed?

If innovation is to be adopted, then all the members of the educational unit have to be ready to go through the difficulties and extra effort naturally included in this change of conditions, practices and structures.

3. Is there the appropriate mindset?

Do the teachers and the students believe that the work they will do in the new learning environment is of importance and will be valued?

All three questions obviously attend to issues of values and norms at school, namely to school culture. It is found that the successful implementation of reform initiatives is affected by the existing school culture, especially depending on the cultural aspects of collaboration, mutual collegial trust, shared goals and the centrality of learning (Reed, 2013, Tschannen-Moran, 2014, in Ganon-Shilon & Schechter, 2017).

Blood and Thorsborne (2005), further, discuss the significant effect of the existing school culture on the attempt to introduce a restorative philosophy in educational units. Restorative principles and practices focus on the development of healthy relationships in the workplace with the ultimate aim of improved quality outcomes for students. As such, the practice in question requires that the school attends to all aspects of school culture, especially to notions of discipline and authority that affect the apportioning of blame and the school's response to wrongdoing. According to the authors' experience, although a carefully designed implementation strategy can be useful, what is of major importance is the realization that the successful introduction and sustainability of a restorative philosophy, heavily, depends on culture and may require significant cultural change.

With the link of school culture to enhanced educational outcomes becoming more and more profound and highlighted, in combination with the realization of the complexity of the concept, a number of issues arise with regards to the management of school culture. These are related to the epistemological perspective chosen to be adopted, that may determine whether managing culture can be regarded as a feasible goal or simply a leadership delusion, as well as to the inclusivity of the project (Legge, 1995).

Taylor (2004) approaches culture management as "message management". This is based on the assumption that culture is, in fact, the outcome of messages, that are communicated through behaviors, symbols and systems. These messages dictate what is valued in the organization and lead to the adoption of certain behaviors by the team members. The role of the individuals involved in the school management is very important in this context of message communication, as their actions and decisions take place in a more visible spot and express what is valued or even ignored around the school. Actions do not have to be big to be important, sometimes small things can manifest the core values held, or desired, in the institution. Even the way the headteacher sets his office or the meeting room can send a message. Is there a table that can accommodate the whole group, or are there small desks that can be occupied by only smaller teams? Is there technology equipment at hand, or are there more traditional tools available? Are there pieces of art on the walls or merely boards of announcements and descriptions of procedures? What is there can show what is valued, what is missing can respectively show what is ignored. One step further, how does the headteacher

respond to a student that is sent to his/ her office for misbehavior or to a parent that expresses his/ her complaints about minor or major school events? Principals, headteachers, managers, all individuals that are involved in the school management, whatever their title or role is, based on the country educational system and on the type of school, are in the spotlight. Their own individual professional culture functions as a compass in the hands of the teaching team, one that can at least suggest, if not dictate, one direction or another.

2.3.3. School culture and school climate.

School climate, just like school culture, has been majorly discussed in the education literature. It has been recognized as an integral, multidimensional characteristic of any organization that affects all its stakeholders. Tagiouri (1968, p.23, in Hoy, Tarter & Kottkamp, 1991) defines it as "a particular configuration of enduring characteristics of the ecology, milieu, social system and culture" approaching it as something similar to an organizational personality. The particular metaphor has, also, been used by Pasiardi (2001) who argues that the school climate is formed by the dynamic interrelations among the psychological, academic and physical dimensions of the school environment. As a result, the climate for a school, just like the personality for a person, works as the essence that differentiates it from other units, giving it a unique form and character, while it affects the behavioral choices and trends of its members as well as their perception of reality (Gilmer, 1966).

The subjectivity of the perception of the school climate is, also, a feature often emphasized, as the term is associated with the subjective, individual experience within the educational environment (Cohen, 2006). Logically following this characteristic, it can be understood that, although the school stakeholders might be able to describe the existing school climate, their description will, most probably, present the subjective perception of their experience, rather than the actual characteristics of the school climate. No matter its subjective perception by people, though, school climate has been recognized as one of these variables that affect school effectiveness, along with school leadership, educators' behaviors and expectations, school achievement and parents' participation (Pasiardis & Pasiardi, 2000).

With school culture and school climate being two concepts that embrace a great range of features and are characterized by high levels of subjectivity, it comes as no surprise that the line differentiating between the two is rather blurred, allowing that they are used interchangeably, at times. Hoy et al. (1991), however, argue that, although the leap from the shared assumptions within an organization, which they perceive as school culture, to the shared perceptions of behavior, which they relate to school climate, might not be large, the difference is real and meaningful. Bylach, Lunenberg & McCallon (1995, in Pasiardis 2004), on the other hand, using the personality metaphor aforementioned, distinguish between the psychological parameters -culture- and the organizational parameters –climate- of the school personality. For other researchers, school climate is regarded as a subset of school culture, which is actually affected by it and evolves on its basis (Pasiardi, 2001).

What can be derived from a closer look to the differences discussed by researchers regarding the two concepts is that there is a general idea that school culture possibly corresponds to a deeper founded essence of the organization, while school climate lies at a rather more tangible level. The metaphor of the iceberg which consists of a big hidden part, school culture with the correspondent values and meanings in our case, and its tip, school climate as a more visible aspect, could provide a clearer visualization of the relationship between the two (Gairín, 2006).

Despite the difficulties in the attempt to distinguish between the two admittedly elusive and complex concepts that, possibly, leave researchers in the area with a vague perception of the limits of each one and, at times, with doubts regarding whether there is even a need for that, both school climate and school culture play a vital role in the development and enhancement of the educational unit at multiple levels, including its predisposition towards change and innovation. In the context of the current research, school climate and school culture are perceived as two inseparable, interrelated features of the school unit, with climate being perceived more as an expression and interpretation of the essence of culture (Kowalski & Reitzug, 1993).

2.3.4. Culture management.

It becomes clear throughout literature that, no matter what the challenges and difficulties of the pursuit are, school culture change is essential and must be made

possible, especially in the case of educational organizations whose members suggest existing culture as the reason behind stifled innovation, unsuccessful change implementation results and status quo maintenance. Without cultural change, in these cases, policy change and reform will, most probably, be exercised in futility. As scholars recognize the contribution of culture to the quality of education provided by schools, and the need for culture change, there arises the question of how one can manage, form or change the culture of an educational unit. If culture is in itself an elusive, multi-aspect concept one can understand how difficult the venture becomes when it is combined with the never-stable concept of change. Culture change cannot be a firmly predesigned procedure with predetermined outcomes rushed through a short period of time. It, rather, requires a long-term systemic approach that can reach up to even half a decade for sustainable change to be built (Blood & Thorsborne, 2005). Educational leaders cannot expect to simply enforce any list of follow-to-succeed guidelines in this attempt just because there are too many variables involved, too much at stake and too many influence forces in action. Then, how can culture management be approached if enhanced change outcomes are to be achieved?

2.3.4.1. School culture evaluation.

The first step of this procedure, as discussed in literature, is about understanding the existing culture, the underlying values and beliefs that guide people's behaviors. After all, one cannot change something that he/she does not know. As a result, school culture evaluation can prove a useful tool in the hands of change agents. Especially in times of change and reform, evaluation of school culture is even more important as it can help identify the forces, assumptions and values that form all these aspects that are to be directly affected by change, such as practices, relationships, processes. Taking into consideration how traditional cultures are particularly resilient and highly resistant to change attempts, the need for a strategic approach that will, first, capture the hearts and minds of the school leadership becomes profound (Lee, 2004). The concept of culture change itself needs to be understood before leaders start to design the reform strategy for their school (Blood & Thorsborne, 2005). Culture evaluation can inform change agents about the needs of the individuals involved, their perceptions of the school identity and goals and their predisposition towards change. According to Roach & Kratochwill (2004), it can show behavioral trends that may demand intervention efforts, but it can also reveal protective or risk factors capable of affecting intervention

outcomes, as well as resources available within the wider community in this attempted process. This knowledge, which can be attained through culture measurement, can prove very helpful and of decisive importance in the complicated process of culture management and change.

In the attempt to measure school culture Angelides and Ainscow (2000) suggest the analysis of critical incidents taking place within the school context. According to Tripp (1993), the term was originally used for the description of turning points in the life of a person, an institution or a social movement in the field of history. In the educational context, incidents do not attain criticality because they are "turning point" events. Rather, they can be seemingly minor events of everyday school life that gain increased importance through the justification and meaning attached to them. This is exactly what makes critical incident analysis particularly interesting and enlightening – it shows the way that underlying values and beliefs make themselves present through the meaning given to minor events. In this way, the observation and analysis of such incidents can be a very useful tool in the hands of the culture evaluator, as well as to the whole school community, especially when it includes reflective discussions of the events by the incidents' participants. Such discussions can result to the realization and identification of uncovered needs, gaps and problems and to the proposition of possible interventions internally. Roach and Kratochwill (2004) bring to our attention the fact that any presentation of the critical incidents should be handled with sensitivity, respect and professionalism for the feelings and reputations of the individuals involved to be protected and for conflict to be avoided.

Culture evaluation has, also, been closely related to Quality Improvement processes, with scholars attesting to the significance of examining and taking into consideration school culture, during implementation of the Quality Improvement process (Detert, Louis & Schroeder, 2001). In this process, the evaluation of the existing culture serves the need for the identification of "value gaps" between the goals of proposed reform programs and existing school cultures characteristics, which the culture change agents will need to address, in order to be able to guide the school community towards a new identity. Taking the analysis a step further, Detert et al. (2001) suggest that reform practitioners should not, merely, deal with the aggregate of stakeholder values in relation to the current culture but rather, also, examine if and to what extent individual

members' values align with the prevalent assumptions and norms that form the particular educational unit culture, and how potential discrepancies have an impact on their well-being and effectiveness. The thorough study of these "value gaps" can provide change facilitators with valuable knowledge, which can help them in their attempt to design interventions with the objective of the alignment of individual or shared values and beliefs with the propositions of the change initiative.

Roach and Kratochwill (2004), suggest three practices in measuring culture:

1. Consideration of the questions than need to be answered.

Culture is a vast notion, including innumerable variables. No questionnaire can cover all of them, no matter how extensive it may be. Culture evaluation facilitators need to decide which aspects need to be studied in each case and to focus on their examination. Additionally, the target group must be specified. Are topics under examination approached from the perspective of the student, the teacher, the headteacher, the family?

2. Use of multiple methods of assessment

Data compiled through culture measurement can be better interpreted within a broader context of information provided by different sources, such as student achievement evaluations, attendance levels or discipline reports.

3. Combination of different methods of study

Each and every of the investigation methods available, questionnaires, interviews, observations, focus groups, can provide certain types of information focusing on different aspects, descriptions and frequency of events, feelings, meaning attached and others. Questionnaires alone may not be able to reach the depth of study of culture needed, since they, mostly, attempt to measure behaviors and practices lying at the surface level of culture. Although, these are believed to be a reflection of the deeper levels of assumptions and beliefs, it must be taken into account that behavior may change in different situations and contexts. Additionally, questionnaires can serve the identification of traits of culture but cannot, alone, measure the level of culture strength and homogeneity effectively (Maslowski, 2006). Consequently, depending on the questions asked and the data that the researcher wishes to access, a combination of quantitative and qualitative methods can provide a clearer picture of the context, offering reformers valuable and meaningful information that can assist any intervention effort.

The accumulation and analysis of such data is, also, proposed by Blood and Thorsborne (2005) in their five-stage model of change implementation. In the first stage suggested by this model, focus is on making a case for change, in order to gain commitment, an element of increased importance and valuable usability in the attempt to change resilient, long held cultures of control and hierarchy. Identification of current practice and its potential drawbacks compared to desired outcomes, with the help of the methods described above, can offer a basis of reason for change and increase motivation.

2.3.4.2. Creating a vision- The role of the leader.

Understanding the existing culture is a complicated process, but it cannot compare with the process of culture change itself. As discussed in the psychodynamics of change, school culture change challenges the existing values and beliefs and affects the established network of relationships, which lie at the core of the system stability. As the interpretations of assumptions and values are questioned, the deepest levels of school culture are destabilized. Individuals find themselves in a vibrant interaction and negotiation with themselves and with the collective consensus, due to the shift of the cultural conceptualization basis and a formation of new shared values (McMaster, 2015). Karadag and Oztekin-Bayir (2018) point to the role of the personal, internalized procedures of both teachers and headteachers in the formation of a positive culture conceptualization, discussing the concept of self-awareness and internalized ethical viewpoint. In addition, the importance of relationship management in culture change is highlighted, as relationships are inevitably altered in the process, resulting in identities being threatened and in confusion, anxiety, conflict and resistance.

The aforementioned conditions result in tension and, unavoidably, resistance. Unless the parts involved are united and driven by a strong binding force, towards a clear, commonly agreed goal. Unless, they share a vision. A coherent vision can specify the norms and values that will guide policy and practice in the school environment, it can provide a framework of thinking over events, needs and difficulties, it can inspire and motivate in the difficult times of change. Even in unstable times of crisis and uncertainty, when governance efforts might turn to resource and administrative challenges, it is held that a shared sense of mission and a clear vision can contribute to an enhanced response to the arising challenges (OECD, 2018).

In Blood & Thorsborne's (2005) model of change implementation, creating a well-defined vision is stage 2, after culture evaluation, and includes outlining desired outcomes, the construction of an aligned framework for practice and the development of a common language. Goldring & Knox (2002), also, support the significance of a shared vision stating that, according to studies of schools in the process of reform, culture can be affected through six key elements: shared vision, traditions, collaboration, shared decision-making, innovation and communication. The management of all these aspects and elements is, profoundly, a responsibility of the headteachers, who are required to devote thought, time and effort to the process of the creation of a shared vision that will be based on the values and beliefs of what the school should be like (Deal & Peterson, 1990).

In discussing the concept, Fullan (1992) highlights that creating a vision ought to be a collaborative activity among all school members, students, families, teachers, headteachers, any type of stakeholders involved in each educational system. Sometimes, headteachers are blinded by their own individual vision, which they attempt to enforce through manipulation, consequently being faced with resistance on the part of the teachers, which, then, they try to decrease through reactive complicated and uncertain resistance management procedures. Proactively adopting collaboration principles and respect at the stage of vision building can save all this effort and pain, instead. It is regarded of critical importance that the teaching staff feels connected to the vision, especially to its innovation aspect, and that they share the belief that their contribution to the achievement of the ultimate outcomes is significant (Results for Development Institute & UNICEF, 2016).

School leaders need to take the time to reflect on their school and examine the predisposition of the people involved towards change, before they set off to change anything. This initial work and the involvement of teachers in their own discovery and evolution can result in enhanced trust and decreased resistance in the next stages of the process (Goldring & Knox 2002). Teachers are most likely to devote time and energy to their roles and responsibilities if they share and support the overall vision (Carpenter & Gong, 2016, European Commission, 2013, in OECD, 2018). Hall and Hord (2015, in Lewis et al., 2016) mention "personal mastery" as the one of the core tasks of

instructional leadership, which is closely related to the creation of a school culture that is positively predisposed to educational change and reform. Personal mastery is seen as a practice of personal vision clarification with regards to individuals' contribution in the organization, placing emphasis to the importance of the integration of teachers' individual visions in the collective shared vision.

The creation of a vision is not a one-off procedure, anyway. It is a notion that requires flexibility, because, although there may be a particular image of the future that is predominant at a given point in time, this image is most likely to evolve Senge (1990). With regards, to this realization, the role of the headteacher gains heightened importance, because a leader's ability to adapt a vision or guide teachers through this process when new challenges arise can lead to the creation and sustainment of a strong and aligned school culture. Building a shared vision is seen as one of the three core tasks of the instructional leadership style aforementioned, along with personal mastery and team learning (Lewis et al., 2016).

According to research, the role of the headteacher gains its heightened importance through its systemic dimension, which approaches him/ her as a negotiator between nationwide reforms and school initiatives (Spillane & Kenney, 2012, Werts & Brewer, 2015, in Ganon-Shilon & Schechter, 2017). Especially in the case of processes related to the successful implementation of school culture development, sustainment or change, the skills and passion of school leaders can be a determining factor (Blood & Thorsborne, 2005; Yalçın & Karadağ, 2013 in Karadag & Oztekin-Bayir, 2018). In any case, the role of the headteacher is particularly important because his/ her actions and decisions act as a reflection of the vision proposed and the cultured aimed at. A headteacher that adopts a respectful, considerable behavior towards teachers and students is more likely to promote and support a school culture based on the same values. Stolp and Smith (1994) offer more practical advice to school leaders through the words of one of their interviewees, who highlights the importance of team-building, of accepting that the headteacher does not necessarily have all the answers, of recognizing one's limitations, of learning from students and teachers, of putting people before paper and the agenda. More advice touching on the same issues comes from Kouzes and Posner (1997, in Blood & Thorborne, 2005), who propose five core

practices for school leaders who aspire to change the way things happen in their school, namely:

• Challenge the process
• Inspire a shared vision
• Enable others to act
• Encourage the heart
• Model the way.

The latter suggestion is reflected in stage 3 of Blood and Thorsborne's (2005) aforementioned model which focuses on the development of responsive and effective practice, on the basis of culture evaluation and vision creation that have preceded. The importance of restorative practice is highlighted in modeling change, along with the provision of the resources needed for the development and maintenance of an ongoing dialogue among all school stakeholders. In this process, training and support of staff must be considered in formal and informal ways, through access to learning resources, collegial support and networking. Monitoring the process with regards to quality standards can ensure filtering of effective and ineffective practices and sustainability of new skills. In the next stage of the model, the creation of a whole school approach is proposed, on the recognition that the solutions and suggestions that are actually recorded to work in practice are, in most cases, holistic ones (Weare, 2004). School-wide policy development ought to take into account the structure and the imperatives of the system and the needs of the people involved, along with restorative philosophy values. Empowerment, dialogue, involvement, sharing of experiences and opening to the broader community are considered valuable in the management of the transition.

Blood and Thorsborne (2005) point that the stages described above do not evolve in a linear way, but rather overlap, affecting each other's evolution. Particularly so is the case with what they place at stage 5, as an overarching element of all culture change aspects, this being professional relationships. As is repeatedly discussed by scholars, relationship networks form the existence framework of school culture, have a great impact in everyday school life and are, primarily and majorly, influenced by any attempt for culture change. As such, management of relationships requires constant attention throughout all transform implementation stages and procedures, with emphasis placed on openness of communication, transparency of decisions, honesty,

support and team-work. The concept of transparency in relationships, which is closely related to trust, and the balanced and objective processing of information before making a decision is given particular emphasis as characteristics of "authentic leadership", which is linked to positive culture formation (Karadag & Oztekin-Bayir, 2018).

2.3.5. Synthesis.

After several years of studying and researching the term of school culture, most scholars in the field of educational administration have a common, almost intuitive, understanding of the concept, more or less reflecting the elements and aspects of culture described in the Chapter 2.3. According to some scholars, however, the field of education, still, lacks a clear and consistent definition of the term (Maslowski, 2006). Maybe, as researchers of school culture, we should come to terms with the idea that all culture elements cannot fit in a few lines, since school culture is, in fact, everything that happens or does not happen in a school. Whatever the case, it cannot be denied that school culture gives an educational unit an identity, a frame of existence and an orientation. In terms of management, it can also provide a "competitive advantage", acting as a steering force for improvement and change, where and when needed. Consequently, no matter what the difficulties and complexities involved in the study of culture, as well as culture management are, and regardless of the strenuous attempts and high skills required in this pursuit, neglecting it or underestimating the importance of school culture is a luxury the educational system cannot afford.

2.4. A Panorama of Greek Education

The Greek educational system develops and functions in a cultural context that places heightened importance on education. This is, often, manifested by strong individual and family commitment to education and significant household investments in relevant services beyond the public schooling system (OECD, 2018). The Constitution of Greece stipulates a commitment to free education, as a right for all Greek citizens (Article 16) and promotes the values of social equity and an egalitarian society (Article 4) (Parliament of the Greeks, 2010). The education system is under the responsibility of the Ministry of Education, Research and Religious Affairs, referred to as the Ministry of Education from now on.

With numerous school units spread to isolated communities and scarcely populated islands and a profoundly local political culture, the need for national cohesion and an intent to counter regionalism translated into a long tradition of centralized governance. Widely held concerns about political corruption and misuse of public funds throughout the years, though, have resulted to the development of a feeling of mistrust towards government initiatives. Combined with an active presence of labor unions, this has led to frequent public demonstrations and strikes over issues perceived as threats to employee rights. At the same time, private entities are very rarely relied upon to serve public purposes, such as tertiary education. In fact, it is written in the Greek Constitution that "the establishment of university level institutions by private persons is prohibited" (Article, 16, Article 8) (Parliament of the Greeks, 2010).

At the moment, the introduction of numerous reforms is attempted, as Greece tries to move from a profoundly centralized governance system to more decentralized decision-making processes and to adapt to the demands of the changing current socio-economic, local and global circumstances. Since 2011, a wave of reforms addressing ongoing challenges have been implemented (OECD, 2018). Although the particularities of the contemporary economic crisis have accelerated events in this period of transition and change, there, still, remains an important gap between theory and practice, intent and implementation.

Since the emphasis of the current research is in primary education, it has to be mentioned that primary education in Greece has a duration of 6 years, with students aged 6-12, mainly. There is a single type of whole-day primary school, for educational units with four or more classes, which follows a nationally common timetable and curriculum. Subject curricula are centrally developed. The syllabus for the subjects taught is compulsory for all students at all primary school grades, with flexibility of choice offered only with regards to the second foreign language.

2.4.1. System organization.

OECD (2016c) describes the Greek educational system as one of the most centralized and deeply bureaucratical systems in Europe. The great majority of decisions are taken centrally at the level of the Ministry of Education and must be, often, approved by the Ministry of Finance and the Ministry of Interior Issues. Procedures are carried out

through a fragmented system of input controls, putting considerable distance between action and accountability.

The centralized structure of the educational system is to an extent a reflection of the traditionally centrally structured governance in Greece, which has been, often, attributed to the political will to sustain control and coherence throughout a geographical territory composed by a great number of disperse communities and islands. In the past decade, attempts have been made towards the decentralization of the system. Currently, governance is administered centrally and through 13 regions with appointed officials in each region.

With regards to the educational system, after the closure of the education offices at the district level with Law 4027 on November 9, 2011, its structure and administration is currently built on four levels, the school unit, the directorates of education at the prefecture level, the regional educational directorates and the Ministry of Education (https://www.kodiko.gr/nomologia/document_navigation/120105/nomos-4027-2011). Regional and district directorates of education function in the aforementioned 13 administrative regions. The responsibilities of these directorates include the implementation of national policies and regulations, administration and scientific and pedagogical guidance. An additional level of 116 parallel district or prefectural directorates of educational administration bear the role of implementing national policies as well, overseeing and controlling school units activities, allocating substitute teachers and providing pedagogical support through the service of school counselors (Roussakis, 2017 in OECD, 2018).

The unfortunate case is that these administrative levels do not function as units of decision-making on the basis of specialization and contextualization. Rather, their main role, as mentioned above, focuses on ensuring that subordinate levels comply with centrally defined directives. The result is that with so many administrative levels, often sharing overlapping responsibilities, between the basis of the structure, the school unit, and the top, the Ministry of Education, communication of needs, problems, intents, ideas, and strategies is hindered rather than facilitated. According to the OECD policy report for Greece (2011, p. 55), “fragmentation of responsibilities hinders effective policy making and does not enhance commitment and ownership of policies among

those who have ultimate responsibility for high-quality teaching and learning: teachers and school directors". Fragmentation and diffusion of responsibilities is, also, reported at the school level, where low levels of autonomy and high levels of prescription are reported (OECD, 2018).

PISA, however, highlights that educational systems that are found to manifest the highest performance scores in Europe have, already, moved from centralized governing systems to decentralized structures, transferring responsibility for student learning to the basis of the system, recognizing the school as the unit for improvement. A great number of the best performing countries, according to PISA criteria, have restructured their educational systems to increase school flexibility, autonomy and, consequently, accountability on the recognition that top-down initiated reforms were, often, distanced from the everyday reality of the teaching and learning practice and, thus, insufficient to achieve meaningful and sustainable change (OECD, 2010, in OECD 2011). In Greece, however, schools enjoy very little autonomy and participation in decision-making. According to the relevant OECD report (2016c), in comparison with the schools in other countries and economies participating in PISA, schools in Greece are the least autonomous, as measured by the percentage of tasks for which they have considerable responsibility (26.4%, rank 69/69).

At the school level, educational units are mainly of comparatively small sizes. This basically pertains to the geographical particularities of the country that require the establishment of schools in low population communities in mountainous regions or islands. The result, at times, is the existence of multi-grade schools where students of different grades coexist in the same classroom through a special approach to the curriculum and low pupil-teacher ratios. In fact, OECD (2011) reports that class sizes and student-teacher ratios in Greece are much lower than in the majority of European countries. In primary education, the maximum number of students in the classroom is set by law at 25. At the same time, teachers in Greece have fewer teaching hours than their European colleagues. In primary education, teaching hours range from 24 per week for the first 10 years of service to 21 per week for teachers with over 20 years of service. Additionally, teachers are expected to stay at school for 6 hours daily in total (30 hours weekly) in order to perform other tasks apart from teaching (Article 9, par. 3 of Law 2517/1997, available at: https://www.aua.gr/gr/synd/eedip/Nomoi_PD_

Theseis/Nomoi/n2517/n2517.pdf ; Article 13 par. 8, & Article 14 par. 20 of Law 1566/1985, available at: http://www.pi-schools.gr/preschool_ education/nomothesia/ 1566_85.pdf).

2.4.2. Teacher resourcing.

Teachers in Greece have been, traditionally, employed on a permanent basis after selection through lists or, lately, exams. A recruitment freeze in public education, since 2008, due to the latest economic crisis has resulted in the increase of the number of short-term contract teachers, which is found to have a negative impact on educational systems (OECD, 2018). In any case, teacher selection is a process that is administered centrally. In the OECD study (2011, p.28), the percentages of principals reporting that teacher selection, dismissal, salary level and salary increase is decided by regional and/or national education authority range from 98% to 100% in all four corresponding items. The only role that schools play in the procedure is that they identify vacant posts expected for the following year due to reasons such as retirement or short-term employment termination. The data is, then, verified by regional directors and communicated to the Ministry of Education. In the past years, there have been attempts towards the development of relevant databases which will provide reliable information about numbers and demographic characteristics of students, teachers and variable dimensions of the school function. The introduction of the database "MySchool" (https://myschool.sch.gr/) in 2013 was a step towards a more detailed and systematic approach towards the availability of updated information from schools, at any given point of time, providing a tool for planning future teacher resourcing (OECD, 2018).

However, the participation of the school unit in teacher recruitment and selection stops as soon as this. The rest of the process is more of a mechanistic distribution of resources to vacancies based on school desirability and teachers' rankings in a national list, which is formed according to points that teachers gather after participation in competitive national exams and according to various other reasons and criteria. However, national exams cannot take into account the specific needs of different educational institutions (OECD, 2018). The teacher allocation process evolves on the assumption that all schools function in the same way and have the same needs, just as all teachers have the same skills, special knowledge and way of perceiving things, and as such the placement of any teacher to any school can be equally effective. A further negative aspect of this

impersonal process is that it does not assist the development of a sense of commitment between teachers and schools, as their cooperation is more of a matter of luck rather than choice. What is more, the fact that teacher resourcing, selection and distribution is controlled centrally results in minimum involvement and responsibility on the part of the other levels of the system.

According to the "Teachers Matter" report by OECD (2005), however, there are advantages to be gained when school units are given a greater role in the process of teacher selection. The adoption of this suggestion, though, pre-requires parallel actions with regards to the development of headteachers' management skills, enhancement of information flow, close monitoring of the teacher labor market and support of disadvantaged schools with the provision of great resources, in order for them to be able to attract effective teachers (OECD, 2011). Furthermore, for the decentralization of teacher resourcing to be successful, regional authorities would have to assume greater responsibility and ensure that teachers are distributed throughout the country in an efficient and equitable way (OECD, 2005). The effectiveness of the teacher recruitment, selection and allocation process gains heightened importance in an educational system where teachers are civil servants in lifetime employment. Taking into consideration the fact that unsatisfactory teacher performance can very rarely, and only in extreme cases, result in dismissal, one can easily understand how vital it is to ensure the quality of the resourcing processes.

2.4.3. Teacher professional development.

Guaranteed lifelong employment, also, highlights the importance of professional development. The situation in Greece is, however, that as the system lacks mechanisms of appraisal of skill development and enhanced performance, incentives for teachers to continuously review their abilities and improve their practice are very limited. The situation consequently poses the need for control over compliance with organizational norms, in order to ensure predictability and effectiveness of practice, which might achieve uniformity and coherence, but results in a system characterized by inflexibility and resistance to change.

Professional development, most often, depends on the individuals' personal need, concerns and intrinsic motivation, as there are no formal professional development

appraisal mechanisms. It is, however, majorly essential and it has to reflect changes in the socio-economic context of the school, advances in knowledge and information and alternations in the role and function of educational units. Teachers find themselves in new, challenging situations. Greek classrooms are becoming increasingly multicultural, especially under the latest circumstances of the refugee crisis, special learning needs are more readily recognized, communication and information technology has now invaded everyday life for good. The role of education, in general, and the teacher, in particular, is, or at least should be, changing. In Greece, however, there is no formal system for the professional development of teachers according to the newly arising circumstances.

According to OECD policy advice for Greece (2011, 2018), there is need for a more local, decentralized approach to teachers' professional development which will take into consideration the schools particularities and needs. New teachers need to be offered well-structured induction programs with possibly reduced workload during their transition to full-time teachers. In-service training must be ongoing and up to date. It needs to be designed within the framework of everyday school practice, while teacher development, in general, needs to be approached on the basis of wider school and educational goals, with the parallel support of appraisal and feedback practices. When major reforms are introduced, professional development has to be adapted to the initiatives proposed in order to help teachers understand and better prepare for the potentially new aspects of their role.

2.4.4. Evaluation in the educational system.

Greece is a country with no tradition in system evaluation. With regards to the educational system, the situation is that there are no large-scale reliable indicators that can provide information about the results, the efficiency, quality and evolution of its practices. In 2010 the Ministry of Education introduced the project "Evaluation of the Educational Work of School: The Process of Self-Evaluation". According to Article 32 of Law 3848/201, each school needed to prepare an action plan at the beginning of the school year and a self-evaluation report at the end of the year (http://www.del.auth.gr/files/PPDE/N_3848_2010.pdf). The report would comment on the extent to which the goals that had been initially set were, actually, achieved, what problems arose during the pursuit of these educational goals and what weaknesses and

strengths were identified. It would, also, assess the performance, efficiency and effectiveness of the school unit as a whole. The completion of the process was under the responsibility of the headteacher but developed through cooperation with teachers and school counsellors. The action plan and evaluation report were to be communicated to students and parents and to be submitted to the Centre for Education Research (KEE). In the next stage, the heads of educational administration departments were to submit reports to their respective regional directors of education based on the results of individual school reports. The project was, initially, implemented on a pilot basis in the academic year 2010-2011, as an effort by the Ministry of Education to develop a culture of evaluation in a country where similar initiatives have been traditionally met with strong opposition. This attempt was not an exception to the rule, either.

Establishing a culture of evaluation is a major challenge in Greece, especially in these times of uncertainty, anxiety and unpleasant changes due to the economic crisis. The introduction of the self-evaluation project was met with great resistance, heated discussion, conflicts and strikes. Teachers went on strike on days when meetings were organized by school headteachers for the preparation of the evaluation reports, headteachers of schools resigned as a sign of resistance to their obligation to lead the evaluation process, unions scheduled open discussions on the topic, national strikes and demonstrations. The initiative was perceived, by a great number of teachers and headteachers, as a concealed intention by the Ministry to gather data that would be, eventually, used for closing or grouping schools or for individual teachers' assessment with the aim of freezing salary increases, punishment or even dismissal. A lack of trust in the governmental initiatives is, generally, evident as teachers fear that such data gathered by evaluation initiatives may not be fairly or efficiently used (OECD, 2018).

People's distrust in politicians and political initiatives, which has traditionally been developed due to identified high levels of political corruption in the Greek territory, has escalated in the insecure circumstances of the economic crisis, making the introduction of such unprecedented reforms a great challenge. Seven years after the pilot implementation of the school self-evaluation, the Ministry of Education still mentions the "introduction of the self-evaluation of the educational work and the educational units in the academic year 2017-2018, with the aim of the creation of a culture of collaborative planning, reflection and assessment of the implemented educational

actions towards the enhancement of their quality" as an initiative for the new reform plan for the period 2017-2019 (www.minedu.gov.gr, 2017). A similar attempt to introduce a teacher appraisal system in 2013 was quickly abandoned as the majority of the schools refused to participate in the project. The teachers reacted on the basis of a feeling of fear regarding their employment prospects caused by the fact that school counselors were motivated to rate 15% of the teachers as inadequate (OECD 2017, in OECD, 2018). At the moment, the Ministry has announced the introduction of an appraisal system for headteachers only, starting in 2018 (MofERRA, 2018 in OECD, 2018).

2.4.5. Student performance assessment.

Student assessment in the Greek educational system is majorly based on continuous assessment by teachers and takes place internally within the school environment. Students are assessed on the basis of school-specific, classroom-specific or person-specific criteria, with regards to the extent to which predetermined goals have been achieved. External assessment and standardized examinations designed outside schools are not used until the national exams in the final year of high school, the results of which determine students' entry to tertiary education. Internal ongoing assessment is used both for summative and formative reasons. Parents are invited to the school to be informed of their children progress on the basis of summative score reports every trimester in primary education. In the meantime, written examinations or oral assessment is used to provide information on students' progress and knowledge development. According to OECD (2018), although teacher assessment is linked with high reliability, the absence of standardized external evaluation, which could provide a valid picture of the level of achievement of educational goals throughout the territory, deprives the Ministry of Education of a sound information basis for policy making and a clear idea of students' performance levels. The only valid comparative mechanisms of quality assurance in place are the national university entrance examinations and the country's participation in PISA. It remains a concern for the author, though, that the extensive use of standardized testing, especially in primary education, may come in contrast with the new identity for education discussed in the literature review.

With regards to external student performance evaluation, the 6th and most recent Program for International Student Assessment (PISA) study was conducted in 2015

with a focus on literacy in science, also including performance in mathematics, reading and collaborative problem solving as minor areas of assessment and, optionally, financial literacy. According to OECD (2016a, p. 3), the study shows "what is possible in education by showing what students in the highest-performing and most rapidly improving education systems can do". In this sense, it offers policy makers a point of reference for comparing the level of achievement of policy targets in their countries with those of other countries.72 countries, Greece included, and approximately 540,000 students completed the assessment. The institution responsible for the implementation of the PISA program in Greece is the Institute of Educational Policy (IEP) (http://www.iep.edu.gr/).

According to PISA results (OECD 2016b, OECD 2017b), Greece falls behind the OECD average regarding performance scores in all knowledge areas evaluated, namely science, reading and mathematics, as well as collaborative problem-solving. Results in mathematics have been found stable since 2006, but results in science and reading have declined, dropping by 19 and 16 PISA score points respectively in the period from 2009 to 2015 (OECD, 2018). Although through the past years, the Greek educational system has been greatly affected by the economic crisis experienced in the country, it remains a reality that Greece demonstrates lower results even when compared with countries with the same or lower levels of economic development.

2.4.6. Other school life indicators.

With regards to students´ life satisfaction, it is found that Greek students rank considerably low in comparison with students in other countries and economies participating in PISA (rank 38/47). The measurement of this indicator is conducted on the basis of the relationship between performance at school and life satisfaction, student's social life at school and the student's home environment. At the same time, Greek students manifest levels of school-related anxiety and achievement motivation that are higher than the mean reported in PISA countries. They do, however, express a stronger sense of belonging to school in comparison to the average reported (OECD, 2017a). In addition, they give generally positive feedback on their teachers, reporting, at a higher than the OCED average level, that they feel supported in their learning by their teachers (OECD, 2015 in OECD, 2018). It is recognized that, although teacher morale is low, teachers remain motivated (OECD, 2018).

With regards to the evaluation of students' beliefs, feelings and engagement there seems to be a problem in the Greek educational system with 48% of students reporting that they have skipped classes or days of school, a percentage well above the average of 25%, as is calculated for all PISA participant countries. Greece also, finds itself below average in students' happiness and students' positive expectations from school achievement. In fact, with response to the statement "trying hard at school will help me get a good job", 81% of students strongly disagreed. Similarly, 87% of students strongly disagreed with the item "trying hard at school will help me get into a good college". In both items, Greece is found among the three highest percentages of strong disagreement among all countries participating in the PISA study, possibly a manifestation of the impact that the recent socio-economic status of the country has had on student morale (OECD, 2015).

2.4.7. Reforms.

In the past years, Greece, emerging from a severe economic and social crisis, has proceeded to the introduction of a number of educational practices and reforms at all levels of the educational system, in an effort to re-establish the conditions for its education system to thrive (OECD, 2018). The majority of the new policies were introduced within the framework of the program "Education and Lifelong Learning", which was, initially, signed for the period 2007-2013 and, then, expanded until 2020. The mission of the program is the improvement of education quality at all levels. The program has developed on the basis of 4 core goals: enhancement of the quality of education and promotion of social integration, improvement of the vocational training system and the link between education and the job market, support of lifelong learning, support of the human capital for the promotion of research and innovation (www.edulll.gr).

2.4.7.1. Organization of the school network.

Regarding the organization and rationalization of the school network, a public consultation was announced in January 2011 by the Minister of education, on the declaration that school merging and consolidation was essential, on the grounds of pedagogical needs more than economic ones. In primary education, the aim of the action, according to declarations made by the Ministry, was to establish robust

educational units with the potential to support innovative activities introduced by the "New School" initiative. A school mapping process was led by the 13 regional directors through cooperation with municipal authorities, in a climate of vociferous reactions by the educational community. Public demonstrations and strikes culminated in February 2011, as teachers and unions were majorly concerned that the merging process would result in a loss of jobs and perceiving the program as change forced on Greece by the "Memorandum", the agreement between Greece and the EU, the European Central Bank and IMF, rather than as an educational need. Despite reactions, the process resulted in the consolidation of 1,933 schools into 877 larger units. In primary education, more specifically, 1,523 schools were grouped into 672 schools. Among the schools that were merged or closed, 169 had up to three teachers, 98 had already stopped functioning and 18 manifested no student enrollment at that time. At the end of the process in March 2011, the Ministry announced that there were 120 new schools with six teaching posts and 61 new schools with twelve teaching posts (OECD, 2011).

In response to the recognition of the ineffective cost structure of the educational system, a central Directorate of Economic Affairs (Ministerial Decision no.110101/H/22-08-2013) was established within the Ministry of Education, with the aim of exploring the improvement of the efficiency of budget allocation in the educational system. During about the same period, the autonomous Authority for Quality Assurance in Primary and Secondary Education (ADIPPDE), which functions under the supervision of the Ministry of Education, was established "with a mission to monitor, study and assess the implementation of education policy in primary and secondary education; to evaluate the quality of the educational work of school and of other decentralized education services; and to supervise appraisal for primary and secondary education teachers" (OECD, 2015, p.39). Evaluation and monitoring of the educational system was a responsibility, already, transferred to the Institute of Education Policy in 2011 (Law 3966/2011, available at: https://www.hellenicparliament.gr/UserFiles/8c3e9046-78fb-48f4-bd82-bbba28ca1ef5/SYNTAGMA.pdf), with a major emphasis on self-evaluation. The purposes, development stages, objectives and supervision structure of the Evaluation of Educational Practice (EEP) were determined, while the teacher evaluation process and criteria were defined. The establishment of ADIPPDE, in combination with the MySchool indicators database, the introduction of school self-

evaluation and headteacher appraisal, is seen as proof of an emerging culture of accountability and data consideration for improvement (OECD, 2018).

2.4.7.2. The "New School".

The "Education and Lifelong Learning" program includes the initiative "New School-School of the 21st century". According to the description of the initiative, the goal is the development of a school that will have the student at its center, a school that will be green, digital, whole-day and open to society, new ideas and the future. The "New School" aspires to be an environment characterized by a creative educational culture that will go beyond welcoming innovation to, actually, causing it (www.edulll.gr).

The new curriculum designed for the "New School" was implemented on a pilot basis in the academic year 2011-2012 in 188 school units, 99 of them in primary education. Compared to previous curricula, it is more flexible and open, liberating the teacher from the use of one and only textbook. It specifies the core knowledge and skills to be acquired through each academic year and the student evaluation criteria, on the basis of the range of different learning styles and paces, and the students' special social, economic and cultural traits. It places emphasis on differentiated teaching, learning and evaluation, on inclusion, support of innovation, promotion of creativity, intercultural cooperation, democracy and social equity, environment consciousness and digital literacy. It suggests the use of a combination of contemporary educational approaches, multiple resources, authentic teaching material and digital tools.

The "New School", also, included the action plan "Digital School", the goal of which was the full integration and incorporation of ICT in the curriculum, as well as in everyday teaching practice. More specifically, the program wished to increase the use of ICT in the classroom from 36% to 75%, the number of school units with access to broadband internet from 30% to 65%, the number of schools with websites from 37% to 70%, the number of students with electronic mail accounts from 44% to 75% while decreasing the student-computer ratio from 17 students per computer to 8 (www.edulll.gr). For the achievement of these objectives and recognizing the urgent need for a new digital school strategy, the Ministry of Finance introduced the implementation of a number of actions, such as the equipment of classrooms with interactive media, the provision of broadband access to all school units on a basis of

equity, the support of various digital actions and the training of teachers in ICT (Ministry of Finance, 2013). At the same time, a number of educational platforms with rich digital content, with the aim of making teaching and administration more effective through the incorporation of ICT, were developed, namely the Panhellenic School Network (www.sch.gr), the educational platform for teaching material (e-yliko.minedu.gov.gr), the website of the "New School" (dschool.edu.gr/), which includes interactive textbooks and the Greek National Aggregator of Education Content- "Photodentro" (photodentro.edu.gr).

This was not the first attempt for ICT introduction in schools, but relevant programs in the past had mostly remained in the early or pilot stages for considerable time (Integrated Computer Studies Curriculum, Pedagogical Institute, December 1997, as cited in Spiropoulou et al., 2007). An example is the program "Society of Information" (3rd Community Support Framework 2000-2006, available at: http://www.3kps.gr/2000-2006.htm), the main goal of which was the "adaptation of the educational system in the requirements of the digital age and the introduction of computer and information technologies in the culture sector". The results of the program, though, were solely limited to a number of Greek school units being equipped with computers and some teacher training planned and implemented, both at a slow rate.

Another action within the framework of the "New School" pertained to the implementation of a new model of 801 pilot whole-day schools, with the aim of expanding the program in all primary educational units. The whole-day pilot school program includes changes such as the expansion of the compulsory school duration, the introduction of English language learning from the 1st grade, as well as ICT, art, music, theatre and cultural activities groups and the improvement of the "flexible zone" for interdisciplinary and creative activities.

2.4.7.3. Other reforms- The three-year plan for education (2017-2019).

Reform efforts, have, also, focused on the enhancement of access to education in disadvantaged socio-economic areas. On the basis of positive discrimination, Zones of Educational Priority (ZEP), with additional funding and human resources provided to participant schools, have been introduced (Law on Development of Lifelong Learning,

2010, in OECD 2015). According to the Ministry of Finance (2013), ZEPs are defined as regions where the basic indicators of school integration (e.g. synthetic indicator of wellbeing and development, indicator of educational level for adults aged between 33 and 43, indicator of poverty danger, total educational indicator) are low, or where there is a significant percentage of special student groups, such as Romani, minority populations, and others. Initiatives such as the ZEP, the establishment of the whole-day schools and actions related to refugee education, show a national commitment to a greater equity in the provision of education (OECD, 2018).

The In-Service Education and Training of Teachers (INSET) which was initiated in the second semester of 2012, promoted both the development of administrative skills for education executives and teaching skills for teachers. During its first stage, more than 63 headteachers participated in order to obtain the Certificate of Administrative Efficiency. In the area of teacher training, INSET focused on the valorization of teaching methods and standardized evaluation methods, with emphasis on experimental, inquiry-based learning approaches and the use of ICT in teaching practice. It included training of teachers specialized in ICT, drama, music, arts and intercultural education, who are currently employed in whole-day primary schools using a unified and revised curriculum, as well as induction training for newly appointed and substitute teachers (Ministry of Finance, 2013).

Numerous short-term programs and actions promoting innovation in the study of many subject areas and the development of various skills have been introduced and implemented in the everyday practice of the Greek educational system throughout the past decades. The goals of these programs, as are described in the official documents issued by the Ministry of Education, the Pedagogical Institute and other education related institutions, included change in learning procedures and development of new skills and abilities for the students (C.I.D.R.E.E, 1999, in Spiropoulou et al., 2007).

In 2017, a new three-year educational plan, published by the Ministry of education, outlined guidelines and directions for change and enhancement in a variety of areas (www.minedu.gov.gr). The core reform achieved, according to the Ministry report, is regarded to be the systematic establishment of the unified whole-day school model to

all schools that have four or more classes (3,555 schools) in comparison to only 1,337 schools of this model in the past. The next steps included in the plan are:

- The extension of the unified whole-day school initiative to 700 smaller school units until 2018
- The enhancement of the afternoon sessions in the whole-day school with the employment of school supervisors
- The change of the students' assessment methods towards a descriptive, qualitative method that will integrate the student and promote collaboration
- The implementation of the flexible zone in all primary schools, along with the introduction of cross-curricular projects in all subjects
- The consideration of a school merger plan with the aim of the facilitation of a gradual decrease of the student numbers per class.

With regards to teaching practices, which are of core importance in the context of the current research, the reform plan includes actions aiming at teachers' training in methods of collaborative teaching, research-based learning, differentiated learning, meaningful problem-solving and descriptive, formative assessment.

2.4.7.4. Reform implementation results.

Research in the Greek educational system has not shown positive findings regarding change, innovation and reform implementation. According to research up to 2007, innovative interdisciplinary programs, which were optional programs implemented after school and dealing with a variety of topics from environmental issues to art, nutrition and others, were only implemented by a small number of teachers. Only 25% of the schools in the Greek Primary and Secondary education had implemented these programs and, unfortunately, even these not on a steady basis but, rather, occasionally. Among other reasons, the unwillingness of teachers to take part in relevant training for these programs is recognized to hamper their implementation (Spiropoulou et al, 2007).

In general, statistics for this period show that only 4 in 10 teachers had implemented an innovative program once or more in their teaching career, while 4 in 10 students had never participated in such a program, although the huge majority of education executives, school counselors, headteachers and teachers did agree that the Greek educational system is in need of innovative programs. Among the reasons for the non-

implementation of innovative educational programs, the researchers mention the hesitation and, occasionally, lack of interest on the part of the teachers, who feel insecure and confused in the new, unfamiliar educational context that these programs are proposing, and who believe that these programs require a lot of preparation, personal work and extra work time (Spiropoulou et al 2007). Even almost a decade later, research findings point to the fact that, although there are teachers that experiment with innovation, the educational system has not developed the mechanisms needed to, systematically, support and communicate such tendencies in order to inspire an even greater number of teachers (Kiriakodi & Tzimoyiannis 2015).

According to research by Kouloumparitsi (2008), the Greek school unit is generally characterized by inertia and introversion, something that is majorly related to the existing administrative structures. As is also stated in OECD reports (2011, 2016c, 2018), education management in Greece is organized and administered in a cumulative, top- down way. Decisions are made by the Ministry of Education and, then, passed on to the periphery of the country, the prefectures and finally locally from the headteacher to the teachers. The attempt to implement new structures on a system built on an old paradigm seems like a superficial, piecemeal approach that can lead to a feeling of discouragement by teachers, especially those most dedicated ones, who do not see any genuine substance in this "bubbly talk" about improvement (Baker, Curtis & Benenson, 1991). Consequently, any attempt to organize and implement innovative programs in the top-down, cumulative manner, in which the educational system currently functions in Greece, stands little chance of achieving its goals and objectives, as rapidly and incoherently implemented new structures create a sense of insecurity, ambiguity and conflict ultimately leading to retrenchment. In the context of the Greek educational system, there is the recognized need for a shift from a piecemeal policy approach to clearly defined long-term educational strategy, developed on the basis of feasible sequential and incremental approaches that do not disregard the capacity of the system (OECD, 2018).

Even after the implementation of the 2007-2013 program, education stakeholders, still, reported an urgent need for reform. According to Panitsides (2014), interviews with 13 senior executives in Northern Greece pointed to a need for more flexible curricula, emphasis on competencies essential in the "learning society", particular emphasis on

foreign language learning and ICT literacy, promotion of learner-centered approaches in everyday school practice, and an enhanced school-labor connection. The decentralization of the educational system, with schools having more administrative and decision-making autonomy was, again, recognized as a catalyst for the effective implementation of reforms, as the current system structure is reported to result in mechanistic inertia. The development of a culture of continuous development among educators was mentioned as basic parameter for quality assurance and was related to the significance of the existence of a self-evaluation scheme, which will not be used for accountability purposes, but rather as a self-improvement tool. According to the interviewees, quality assurance, also, heavily depends on stability of funding, which was, however, regarded as unrealistic in the current circumstances of the economic crisis.

2.4.8. School culture and school climate in Greece.

Although the focus of the current study is on the concept of school culture, it has proved very difficult to find relevant information about the Greek educational system as there seems to be a gap in the research of school culture in the region. Consequently, evidence regarding some aspects of school culture in Greece was derived from research mostly focusing on the concepts of school climate and interpersonal relationships in the school environment.

The most thorough relevant study regarding organizational climate in primary education in Greece was conducted by Kavouri (1998). In the survey in question, the researcher used the OCDQ questionnaire, designed by Halpin and Croft (1963), in order to categorize schools under four distinct types according to the type of their climate, these being open, closed, engaged and disengaged. In the case of the Greek primary education, as it was investigated by Kavouri, the results were not very optimistic with 19% of primary schools found to have a closed climate, 30.9% an almost closed climate, 14.3% an almost disengaged climate and, only, 35.7% an open climate. Kavouri argues that the results of the research should come as no surprise under the circumstances of a centrally governed educational system, which lacks adequate professional integrity, autonomy, a coherent plan of professional training and recognition and motivation mechanisms, while favors the development of a “civil servant- obsequious” mentality among teachers. Low levels of initiative shown by disengaged teachers are, also, linked

to a resulting lack of innovation and creativity. The weakened and limited role of the headteachers is found to negatively affect the development of a more open school climate. It was pointed, however, that educational units in geographical areas with a low socio-economic status tended to be characterized by a more open school climate.

On the other hand, research conducted in the same period by Tzani, Pamouktsoglou and Stratikopoulos (1998, in Matsagouras, 2000) resulted that the work climate existing in primary educational units was characterized by relationships of trust between teachers and headteachers, as well as among teachers themselves. Primary educational units were found to be perceived as workplaces with a positive professional environment where teachers were satisfied by the headteachers' skills, participated in decision-making procedures regarding everyday school issues and enjoyed warm interpersonal relationships. Especially with regards to the role of the headteacher, more recent research has shown that his/ her attitude, decisions and actions are a decisive factor that can have a great impact on the school climate (Zmpainos & Yiannakoura, 2010; Gournaropoulos, 2007). In particular, teachers tend to prefer an open, accessible and collaborative headteacher and value his/ her interpersonal relationship management skills (Koula, 2011). Research conducted by Panagiotidou (2012), further, highlighted the teachers' perception of a positive correlation between school climate and the relationships developed among teachers. In addition, it is found that school climate is a factor that is positively correlated with teachers' job satisfaction in primary education (Sotiriou & Iordanidis ,2015).

Another aspect that has attracted the interest of researchers in the region of Greece has been the relationship between the school climate and the teachers' professional development. Results of relevant research have shown that teachers in primary and pre-school education in Greece particularly value cooperation in the school environment as they feel it encourages them to participate actively in processes related to their professional development. It has to be mentioned that teachers, also, place special emphasis on the collaboration with students and parents (Fotopoulou, 2013).

2.4.9. Synthesis.

Research in the Greek educational system has shown that implementation of educational reforms is characterized by delay and shortcomings. Numerous reform

initiatives have been introduced in the past decades, and especially during the most recent years, under Europe-led programs, but the needs recorded seem to remain the same even after the implementation of various actions and the declarations of the Ministry of Education. The paradox is that Greece is found to have a committed teaching body which is, however, accomplishing average results, at least according to PISA reports, something that highlights the need for an environment that will favor school improvement (OECD, 2018).

The centralization of the administrative system is recognized as a major handicap in the process of reform initiation, both by external evaluation studies (OECD, 2016c) and internal research, especially in a governance system that is characterized by instability and fragmentation, with the average service of Ministers in the Ministry of Education hardly exceeding 18 months since the political changeover of 1974 and until today (Panitsides, 2014).

Still, reform attempts are continuous. In 2014, the continuation of the program "Education and Lifelong learning" for the period 2014-2020 was decided and signed. In 2017, the new three-year action plan for education was announced. The Ministry of Education declares that its long-term strategy pertains to the continuation and extension of institutional changes. In primary education, in particular, emphasis is put on administrative and structural changes, as well as on the enhancement of preschool education. The education quality improvement policy focuses on the evaluation of the school units and the efficiency of the educational system, the development of students' literacy and skills, especially in language, science and mathematics, the improvement of the curriculum and the enhancement of teaching practice. The need for a prompt and effective integration of ICT and the importance of digital literacy are emphasized. In addition, emphasis is placed on issues of inclusion through planning and implementation of activities of special education, which are designed on the basis of the new directions dictated by the International Convention on the rights of persons with disabilities. Cross cultural educational action is to be implemented with the aim of reducing levels of school dropout, while more school units are expected to participate in the initiative of the "New School" in the new implementation period (www.edulll.gr).

With regards to school culture and climate in Greek primary education, elements of a closed climate which is, however, characterized by warm relationships are found. It is recognized, though, that there are no sufficient recent research data that can show how the shared assumptions, values and practices have evolved under the latest circumstances. The study of updated data that can cover the research gap identified with regards to the formation of school culture in the present is one of the main aspirations of the current research.

3. EMPIRICAL FRAMEWORK

3.1. Research Philosophy

Attempting to answer a research question includes a number of intertwined decisions that guide research steps. The basis of these decisions lies on the theoretical framework, sometimes referred to as the "paradigm", according to which knowledge and its exploration is approached and which determines the research intent, motivation and expectations (Mackenzie & Knipe, 2006). Research paradigms are, themselves, approached in many distinct ways throughout literature, with their definition remaining a, rather, subjective issue. According to Bogdan and Biklin (1998, p. 22), a paradigm can be described as "a loose collection of logically related assumptions, concepts or propositions that orient thinking and research". It remains a fact, though, that despite the "looseness" associated with the term, research design cannot be built without the basis of a theoretical research framework.

According to Bryman (2008, in Eyisi, 2016) qualitative and quantitative research may differ in their paradigmatic approach on the basis of their distinct ontological and epistemological conceptualization. At the level of ontology, reality can be approached in a number of different ways. For realists, there is a single reality that exists externally to individual experiences. At the epistemological level, realism argues that knowledge of this reality through research can be subject to error and eventually replaced by future knowledge (Morgan, 2014). Such a perception of the world is related to positivism, and based on the rationalistic philosophy, which is mainly associated with science research and the study of the natural world. However, at times, it is applied to the social world, on the acceptance of the assumption that "the social world can be studied in the same way as the natural world, that there is a method for studying the social world that is value free and that explanations of a causal nature can be provided" (Mertens, 2005, p. 8 in Mackenzie & Knipe, 2006). Consequently, at the methodology level, positivism is associated mainly with the use of experimental research designs and quantitative research methods (Morgan, 2014).

The constructivist or interpretivist paradigm, on the other hand, views reality as a socially constructed concept that exists and is formed through individuals' unique experiences and beliefs (Corbetta, 2003, Marcon & Gopal, 2005, Kroeze, 2012, in Rahman, 2017). Ontologically, this means that there is no single reality but, rather,

multiple individual realities. As a result, the constructivist researcher aims at investigating the world of human experience, where reality is socially constructed, based on individual perceptions of truth, and accepting that his/ her experience and background may have an impact on the interpretation of reality, as well (Mackenzie & Knipe, 2006). The use of qualitative research methods is common within the constructivist pursue, in order for individuals' experiences and beliefs, and construct theories based on the interpretation of these to be investigated (Morgan, 2014).

Towards the last decades of the 20th century, the aforementioned research paradigms were approached with concern on the basis of the realization that they were developed through the perspective of the "white, able-bodied male" (Mertens, 2005, p.17), inevitably resulting in the marginalization of a number of society groups. Various researchers' interest in issues of social justice and their perception that research should aim at providing an action agenda for reform gave rise to the transformative paradigm, which wishes to connect research with a political agenda that can transform the lives of the participants (Creswell, 2014).

Similarly to the transformative paradigm, pragmatism has, also, only lately been included in the discussion of social science research paradigms, something that can be potentially attributed to the fact that pragmatists do not put emphasis on the metaphysical concerns about the nature of reality and truth that form the basis of the philosophy of knowledge (Morgan, 2014). In fact, the pragmatic perception of reality is constructed on the idea that no theory of reality is general, possible or, indeed, needed (Dewey, 1917). Pragmatism evolves somewhere in the middle between positivism and constructivism claiming that, although reality exists apart from human experience, it can, only, be encountered through that. Epistemologically, this leads to an interpretation of the world as something that is equally real and socially constructed (Morgan, 2014). With emphasis put on the research problem, pragmatism does not commit to any system of knowledge philosophy or predetermined research methodology but, rather, favors the combination of methods deriving from a problem- centered approach to research. The result is pluralism in the use of research methods and in pragmatism being, usually, associated with the use of mixed methods (Mackenzie & Knipe, 2006).

Within the context of the current research, emphasis is put on the particular research objectives and questions analyzed in Chapter 1, which guide all relevant research choices. Reality is seen as the interpretation of independently existing conditions through the subjective eyes of individuals who evolve within, are affected by and affect their social environment. Consequently, the philosophy of the research in question is found to be closer associated with pragmatism, with the researcher's decisions regarding methodology being taken with the aim of developing a combination of research methods that will best serve the research aim and objectives.

3.2. Reasons for Conducting a Mixed Methods Research

Despite the fact that a mixed method research design includes a number of complexities and requires more resources, it was regarded appropriate for the aims of current research for a number of reasons which are analyzed below.

School culture is repeatedly described through literature as a multi-level, and, perceptually, highly subjective construct. In order to achieve a better and more representative understanding of the concept, access to the highest number of responses possible, within the research time framework, through the conduction of a survey was regarded appropriate. Additionally, adopting a quantitative approach is expected to counterbalance the subjectivity of the concept, to the extent possible, as quantitative research methods are generally characterized by heightened objectivity, with the questionnaire being a firmly designed tool which involves minimum intervention on the part of the researcher, both during its administration and analysis stage (Morgan, 2014).

It is, also, argued that the findings of qualitative research methods, when used on their own, are, often, limited to a specific group of people being studied, with respect to the belief that the social world is a dynamic construction in constant change, consequently, potentially depriving the research findings of the potential of generalizability (Eyici, 2016). Smaller sample sizes associated with qualitative research methods, further, raise the issue of generalizability to the population (Harry & Lipsky, 2014, Thompson, 2011 in Rahman, 2017). On the other hand, according to Johnson and Onwuegbuzie (2004), quantitative methods can offer the advantage of generalizability, since an effective

sampling procedure can result in the selection of a set of respondents capable of representing the population. The acceptance of this fact led the researcher to the decision to include quantitative methods in the current research design.

Taking into consideration the complexity of the concept of school culture, however, made the use of supplementary qualitative methods necessary, as such methods can help the researcher reach the multiple levels and aspects of complex constructs more effectively. The qualitative research methodology is believed to allow a thorough and appropriate analysis through more flexible structures that can be constructed and reconstructed to a greater extent (Maxwell, 2012). According to Rahman (2017), this makes qualitative methods appropriate for studying complex concepts and issues.

Apart from complexity, school culture is also described as a concept majorly affected by contextual factors, which provided a further reason for the use of qualitative research methods (Johnson & Onwuegbuzie, 2004). Qualitative data instruments such as observation or interviews are used to collect data from participants in their natural settings, placing particular importance in the role of the context and allowing the researcher to engage in it (Eyisi, 2016). Although researcher detachment is seen as a characteristic that allows increased interpretation objectivity, it may be regarded as a weakness of the quantitative methods in cases where in-depth study of phenomena in their natural settings is the objective, such as in the case of the current research.

Mixed methods research is, also, often associated the benefits stemming from triangulation (Mertens & Hesse-Biber, 2012). According to Tashakkori and Teddle (2003), the combination of quantitative and qualitative research methods and data may, result in three distinct outcomes:

- Convergence and the same conclusions
- Complementarity, due to the relation of different results to different research objects or phenomena
- Divergence or contradiction

Within the context of the current research, all three potential outcomes are held to be of value. Potential convergence of conclusions would increase research validity through verification, while divergence would result in new explanations of the phenomena and

the recognition of areas in need of further research. Furthermore, it is recognized that different research approaches would serve the investigation of different investigation objects in a more effective way, which provides a supporting argument for the use of mixed methods for reasons of complementarity of results.

As a result, the research design that was regarded most appropriate for the study of the particular research question includes a mix of quantitative and qualitative methods in an effort to achieve the combination of strengths offered by the two. The decision was, especially, made with the aim of ensuring objectivity and generalizability of the results, to the extent possible and of providing deep insights of the questions addressed.

3.3. Research Design

Both quantitative and qualitative research tools were utilized for the aims of this study, as mentioned above. The quantitative method used, namely the survey, aimed at the investigation of the teachers' and headteachers' perceptions regarding the existing and desired school culture in Greek primary schools, with an emphasis on the predisposition of school culture towards change. The analysis of the quantitative data, further, served the objective of identifying potential value gaps between the two. Qualitative research tools, which included interviews, observation and document analysis, were used mainly with the aim of achieving a deeper understanding of the complex aspects of school culture and an enrichment and triangulation of findings, which is held to offer benefits to mixed methods research approaches (Mertens & Hesse-Biber, 2012). The objective of gathering teaching and learning practices focusing on contemporary skills was, also, pursued through the follow-up qualitative research tools. The correspondence of the quantitative and qualitative tools used to the research questions is shown in Table 4.

Research Tools / **Research Questions**	Preliminary Interview	Survey	Follow-up Interview	Observation	Document analysis
Cultural predisposition to change	x	x	x	x	x
Academic emphasis and practices	x	x	x	x	x
Value gaps between existing and desired school culture		x	x		

Table 4: Research questions and research tools

The study of the school culture, which is aforementioned as the first research question, is served by the use of all the research tools developed and implemented within the context of this study, as it is recognized that school culture is a vastly multi-dimensional aspect that requires thorough and in-depth investigation. Based on the conceptual map suggested by Beare et al. (1992, in Gairín, 2006), the research tools used aim at serving the investigation of specific school culture manifestations, as is presented in Table 5.

Culture manifestations	**Research Tools**	Prel. Inter.	Surv.	Follow-up Interv.	Obs.	Doc. Anal.
Conceptual/ verbal manifestations	Goals and objectives	x	x	x		x
	Curriculum	x	x	x	x	x
	Language	x		x	x	x
	Metaphors		x			x
	Stories of the organization			x	x	
	Heroes of the organization			x	x	
	Organizational structures		x	x	x	
Behavioral manifestations	Rituals			x	x	
	Ceremonies			x	x	
	Teaching and learning		x	x	x	x
	Procedures		x	x	x	
	Rules and regulations, award and punishment		x	x	x	
	Social and psychological support		x	x	x	
	Interaction models between the families and the community		x	x	x	
Visual & material manifestati	Installations and team		x	x	x	
	Tools and memory		x	x	x	
	Emblems and mottos			x	x	
	Uniforms				x	

Table 5. School culture manifestations and research tools

More specifically, the preliminary interviews were designed and conducted on the basis of a semi-structured design that allowed the researcher to address issues of importance for the research, but also let the respondents highlight a variety of factors that they attach significance to, through their individual categories of meaning. The aim of the use of this preliminary qualitative method was to provide an initial insight to the conceptualization of the construct of school culture and its dimensions (objectives 1 and 2, see Chapter 1), with specific references made to the relationship of the school culture and the choice of teaching practices and to emphasized skills (objectives 4 and

5). Although the findings of the preliminary interviews were used for the enrichment and triangulation of the core quantitative findings, they, also, mainly served the objective of informing the development of the survey tool, through the recognition of cultural dimensions held of importance according to the participants' respondents.

Surveys provide the advantage of easiness of access to data from a larger sample and a wider geographical area combined with low cost and the possibility to use statistical data as a tool for saving time and resources (Bryman, 2001, in Eyici, 2016). Within the context of the current research, although all objectives were served by the analysis of the survey data, the survey was conducted with the main aim of forming a rigorous information foundation, with regards to teachers' and headteachers´ perceptions of the existing and the desired school culture, as well as of the learning practices in use in everyday school life, given the available resources (objectives 1, 2 and 5). The questionnaire items focus on those aspects of beliefs and assumptions that are related to the concept of change, in order to identify the predisposition of school culture towards change, current realities and innovation.

The questionnaires were designed by the researcher based on the research objectives aforementioned and include two assessment scales for all the 11 items measured. In each one of the scales, the respondent had to divide 100 points among four alternative descriptions of culture manifestations. In the first scale, the questionnaire items attempt to measure the teachers' and headteachers' perception of the aim of education, as well as their core values and beliefs that guide their decisions, choices and actions in the everyday school practice (objectives 1, 2 and 4). They, also, investigate the level of use of a number of learning and teaching techniques proposed in the literature for the development of 21st century skills (objective 5) and the characteristics of the students and the families (objective 2). In the second measuring scale, the same questionnaire items are used with the aim of studying the teachers' and headteachers' opinion of how the aforementioned dimensions should be ideally formulated, rather than how they are currently. The results of the analysis of the responses to this scale provide a picture of the respondents' perception of the desired school culture. The comparison of the two in the discussion of the findings results in the identification of potential value gaps between the actual and the desired situation and, consequently, of areas in need of intervention (objectives 7, 8 and 9). The quantitative analysis of the findings, also,

serves the investigation of the levels of strength and homogeneity of the school culture (objective 3).

The questionnaire, also, includes a section with demographic information: sex, age, education level, specialty, years of work experience, years of professional service in the current school, school size and population of the school area. In addition, participants were asked to provide their electronic mail details if they wished to be contacted for an interview in the follow-up stage of the research procedure. Both versions of the questionnaire, for the teachers and the headteachers, can be found in the Appendix (Items 2 and 3).

The research method of observation was chosen based on the fact that it can provide access to non-verbal expressions of school culture, thus, potentially, contributing to the clarification, enrichment and triangulation of unclear, incomplete, inaccurate or even distorted descriptions of events and concepts in questionnaires and interviews. Inside and outside classroom school processes were observed with the aim of developing a holistic, deeper understanding of the existing culture conceptualization in the schools in question. Visual manifestations, such as emblems, space organization and tools that cannot be directly accessed through the other research tools were given emphasis, along with a variety of other conceptual and behavioral manifestations of the school culture, as is shown in Table 5 above.

The researcher observed a variety of classes, teacher meetings and school buildings. The dimensions observed according to the observation code (see Appendix, Item 4) were decided based on the objectives set for the research. Expressions of cultural values and beliefs, as well as practices manifesting such beliefs that are relevant to the introduction of change were searched for (objectives 1, 2 and 5). Observation, further, served the objective of the identification of the areas of increased academic emphasis and the balance between the development of content knowledge and skills (objective 4). Additionally, practices in use that promote the development of 21st century skills were recorded (objective 6), while the combination of the observation findings with the rest of the quantitative and qualitative findings contributed to the investigation of the cultural strength and homogeneity (objective 3).

The follow-up interviews were semi-structured around questions regarding the existing and desired school culture in the context of primary education. One of the objectives of the interviews at this stage was the clarification, enrichment and triangulation of the findings of the survey, especially through the use of examples from cultural manifestations, such as rituals, ceremonies, organization stories or heroes. The main aim of the use of the particular qualitative method was to achieve a deeper and more direct understanding of teachers' and headteachers' response to identified contemporary and arising education circumstances and to collect a list of relevant learning and teaching techniques used in practice at the school level (objectives 1, 2 and 5).

In addition, the interviews focused on the recognition of teaching and learning techniques related to the development of the 21st century skills (objective 6). Questions in the interview, also, addressed the reasons and processes behind teachers' and headteachers' choices and decisions regarding where emphasis should be placed within the limited time and resources of the educational practice (objective 4). Finally, the particular research method was regarded appropriate for investigating the teachers' and headteachers' perceptions of the desired school culture and the differences between that and the actual one (objectives 7 and 8). Motivating the teachers and headteachers to talk about the changes they would like to see in education, also, served the objective of listing suggestions for policy interventions (objective 9).

The document analysis aimed at the enrichment and triangulation of findings from previous stages, within the context of the sequential research design. In particular, the national curriculum was chosen for analysis based on two facts. Firstly, due to its substantial role in the formation of the educational practice and, secondly, because data from the survey and the follow-up interviews manifested that it has a great impact in the formation of teachers' and headteachers' decisions and choices in the specific context of the current research. The educational aims and values promoted by the curriculum were investigated (objectives 1 and 2), along with the suggested practices (objectives 4 and 5). The curriculum analysis, further, served the objective of the study of where academic emphasis is placed in the Greek educational system (objective 4), since the directions of the particular document constitute the official expression of the state position on the issue. The document analysis provided access to data that was

deemed essential for the researcher to be able to have a more thorough picture of the contextual factors affecting the school culture in Greek primary schools.

3.4. Research Stages

For the aims of this study, quantitative and qualitative research tools were utilized within a sequential three-stage research design. After the discussion and analysis of the theoretical framework, the first stage of the research consisted of the conduction of semi-structured interviews with teachers and headteachers in primary schools in the region of Crete, Greece, which was, then, followed by a survey in the core quantitative research stage. The final stage of the sequence included a second set of semi-structured interviews, school practice observation and document analysis. As a result, the research follows a qual – QUANT – qual design, where the core quantitative methods were supplemented by the use of qualitative methods in the preliminary and follow-up stages.

The qualitative research tools are used on the basis of different motivations at each stage. In the preliminary stage, the interviews were conducted with the aim of providing the research design with contextual strength and to provide an initial insight to the participants' interpretation of the construct of culture. The results of the analysis of the interview responses were used on the motivation of the development of an enhanced questionnaire design (Arthur, Waring, Coe & Hedges, 2012). The follow-up qualitative interviews, on the other hand, were mainly conducted with the aim of the exploration of the reasons and factors that affect the occurrence of certain sets of results and the illustration of the quantitative data with details that can provide depth to their analysis (Morgan, 2014). It becomes obvious from the motivation of the two that, in order for the quantitative and qualitative research methods to fulfil their role, the combined research methods had to be organized in a sequential research design, since the results of the one informed the development and use of the other. The research stages and their timeframe are presented in Table 6.

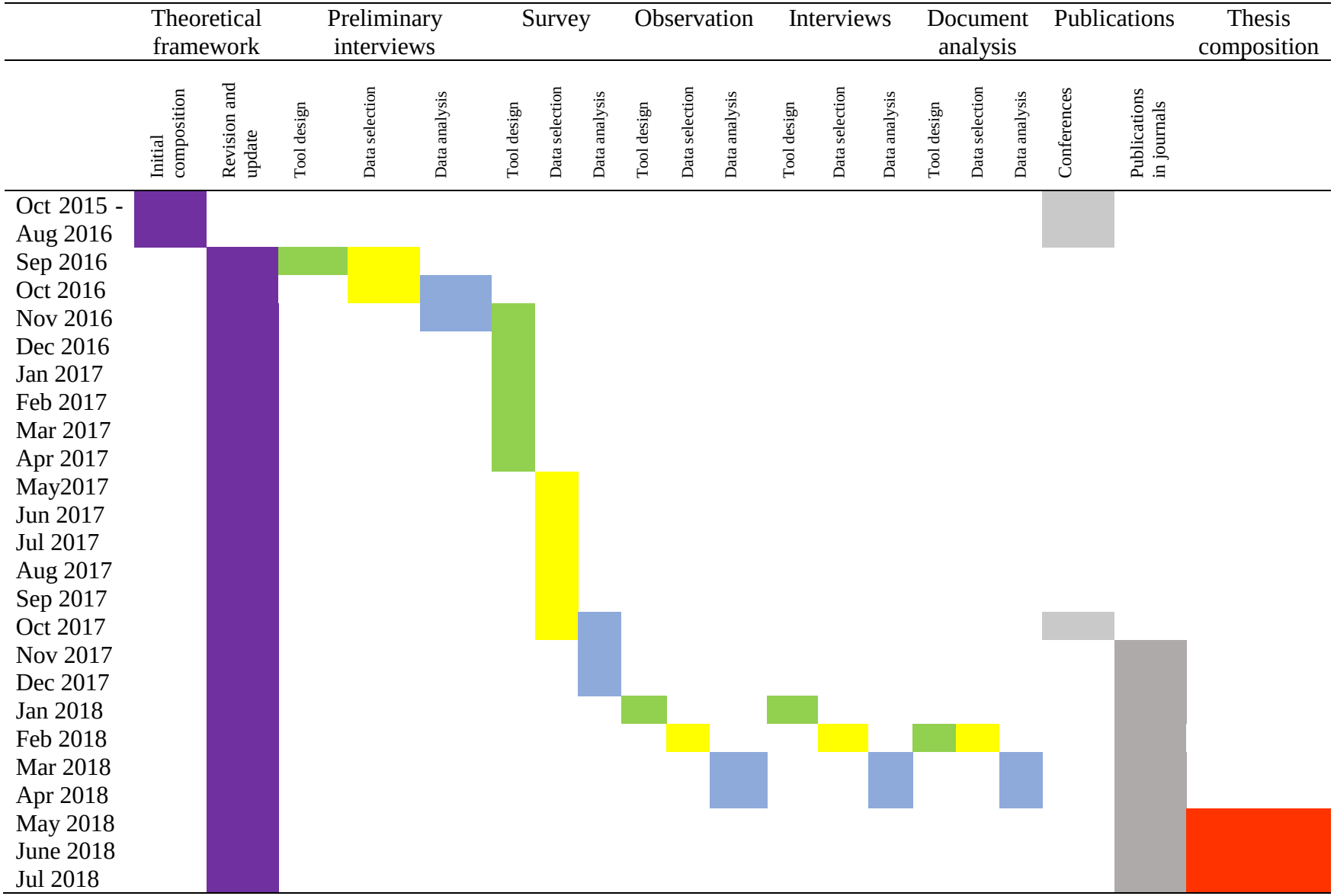

Table 6. Research stages timeframe

As is shown in Table 6, the literature framework was, initially, composed during the academic year 2015-2016. Its revision and update with new, most recent literature, however, continued until July 2018. The preliminary interviews of the first stage of the research were designed and conducted during the months of September and October, 2016. The analysis of their results, which was completed in November, 2016, provided data useful for the development of the questionnaire to be used in the core stage of the research. The development of the initial questionnaire was conducted during the last month of 2016 and the first month of 2017, followed by the process of its assessment by experts, which was completed in March, 2017. The results of the analysis of the experts' responses provided a basis for the enhancement of the validity and univocity of the items of the survey tool, which was redesigned in the following months, in order to be delivered towards the end of the current academic year. The survey data collection process was completed in October 2017 and the analysis of the results in December, 2017. The design of the third stage of the research, which was based on the analysis of the results of the survey, was developed in January 2018, while the visits to the schools for observation and interviews took place in February 2018. The analysis of the data collected in this stage, as well as document analysis followed in March and April 2018. From May 2018 until June 2018, all literature review and research procedures and data analysis were reviewed and brought together, in order for the research questions to be answered.

Papers relevant to the current research were presented in two conferences, one in April 2016 and one in October 2017. In addition, relevant articles were written and published. The articles were submitted to the journals in December 2017 and in March 2017 and were, both, published in the volume of July 2018, after a process of peer-blind review. The final composition of the thesis took place in the months May-July 2018. Details about the conferences papers and the published articles can be found in the Appendix (Item 6).

3.5. Model of Culture Types

As a result of the study of the literature framework with regards to the cultural aspects most related to the introduction of change, mainly in teaching practices, an original model of four distinct culture types was designed. The model covers the range of

different types of cultural predisposition to change through four distinct types, namely the change rejective, the change resistant, the change friendly and the change creative culture type. The development and application of the research tools and the data collection and analysis are performed with the aim of studying the predisposition towards change and innovation in the prevalent school culture in primary education with reference to these four different types of school culture, which are presented below.

Type A. Change rejective school culture.

The teachers, the headteacher and the families believe that change endangers stability, entails a lot of risk and has to be avoided. They answer to increasing uncertainty and external attempts for introduction of change and innovation with increased levels of command and control (Wheatley, 2005). There is no cooperation among teachers, who prefer to work independently using traditional methods that they feel very familiar with. The headteacher, as well, acts independently, excluding teachers from decision-making processes. The decisions taken by him/ her hold the aim of sustaining the long familiar school processes, which results in a strongly negative stance towards change and innovation. Students feel comfortable only in traditional processes and fail to complete their tasks if they must change the way they know to do things, while their families intervene to block the introduction and implementation of new teaching methods and innovative projects. Emphasis is on academic achievement only, as well as the development of a profound knowledge of facts and, thus, teachers stick to the curriculum and the schedule, seeing themselves mainly as "content", with their main objective being to function as source of unquestionable information (Thomas, 2012).

Guidelines to students are very specific, procedures are rigid and deviations from them are negatively perceived. Knowledge is approached in a mechanistic manner, with learning being perceived as a specific set of steps towards maximum information absorbance in the given time (Douglas, 2007). In this context, standardization of procedures, with the ultimate goal of normalization, does not leave space for creativity and imagination (Thomas, 2012). Specific measurable results are expected from students and deviation from these results is negatively judged, based on the perception of specific academic and professional abilities, which conform with the dictations of the industrial revolution that have determined the formation of the public educational

system (Robinson, 2007). Within the teaching procedure, only traditional resources (books, pencils, notebooks, and others) are used, as teachers refuse to integrate information and communication technology in everyday school life. In general, only traditional teaching methods are used, since they are perceived safer due to increased familiarity and long use, while innovative methods and projects are considered risky and, thus, avoided.

Type B. Change resistant school culture.

The headteacher, the teachers and the families of the school share the belief that change includes risk and is unlikely to result in improvement. As a result, introduction of change is met with a certain level of resistance and requires time to be accepted. The stakeholders do not recognize the need for change and experience feelings of anxiety towards the new unknown conditions (Williamson & Blackburn, 2010). Teachers manifest a preference towards familiar teaching routines and methods and, rarely, cooperate with each other to try something new. The headteacher is suspicious towards the introduction of methods that have not been tried before and emphasizes the related risks and dangers. Students prefer to follow familiar procedures and traditional learning methods and they require a lot of time and effort to get used to new processes. Families are concerned when different, innovative teaching methods are introduced, they express their disbelief through complaints and need time to accept the changes.

Emphasis is placed on academic achievement and efforts are made for deviation from the curriculum and the teaching timeframe to be avoided. Consequently, personal, social and civic skills are only addressed when and if there is free time within the school schedule, with the result of "soft skills" often being disregarded as teachers are, also, rarely trained or encouraged to teach them (Wagner et al., 2012). Specific guidelines and procedure directions are given to students, from whom predetermined results are also expected, although deviation from the procedure might be accepted if the results are achieved. Teachers prefer to use traditional resources and hesitate to integrate the available information and communication technology, which is mostly used for practical reasons and for the facilitation of some school activities. Regarding the implementation of innovative projects, these are avoided, if possible, or undertaken after a certain length of time, or after others have tried them, as teachers prefer to do things in familiar ways to minimize uncertainty and risk.

Type C. Change friendly school culture.

The headteacher, the teachers and the families share a positive stance towards change and are, thus, open to suggestions regarding the introduction of new teaching methods and the implementation of innovative projects. Teachers cooperate to put externally suggested ideas to practice, while the headteacher welcomes new ideas and supports their implementation both mentally and practically. An environment of collegiality and trust is inspired by the headteacher through the administration of everyday procedures as well as his/ her own behavior (Hallam & Hausman, 2009). Participation in decision-making increases the levels of acceptance and facilitates the implementation of innovation and the introduction of new processes (Armengol Asparó, 2001). Positive micropolitics, such as empowerment, increased classroom autonomy and collaborative relationships are generally prevalent. Students are happy to try new things, enjoy new learning methods and adapt quickly. Families welcome new teaching processes and cooperate to help overcome difficulties and enhance the expected results.

Emphasis is placed on the development of personal, social and civic skills in everyday school life and through projects designed and suggested by various institutions. Learning is approached through a more organic perspective, according to which all stakeholders focus on the creation of the essential conditions for students to be able to "flourish" in their own way, rather than achieve predetermined results common for everybody (Robinson, 2010). Tasks and activities are characterized by a certain level of flexibility and different approaches are welcome and discussed. The teacher accepts his/her role as just one "context" of knowledge among many others, rather than as "content" (Thomas, 2012). Information and communication technology is used on an everyday basis at school, while students are, also, encouraged to integrate it in their learning methods at home, as well. In general, teachers are ready and willing to implement innovative projects that are externally suggested by a variety of institutions.

Type D. Change creative school culture.

The headteacher, the teachers and the families believe that it is the aim of the school to bring about change and, for this reason, they devote a lot of thought and effort to that aim. They cooperate meaningfully and on a regular basis, exchanging ideas to design, plan and implement new learning processes. Trust, support and a prevalent feeling of security are the key ingredients in collegial relationships and school-family

communication, through which action is facilitated and openness to innovation is achieved (Hallam & Hausman, 2009). Individual initiatives are welcome and supported in a way that becomes obvious in the school practices (Blood & Thorsborne, 2005). The headteacher encourages teachers to try new things, informs them about ongoing innovative projects and, fully, supports the planning, introduction and implementation of change. He/she acts constructively, managing information with the aim of promoting an "inquiring stance" regarding school processes in order to challenge current assumptions and inspire change (Lambert et al. in Ainscow, 2005; Karadag and Oztekin-Bayir, 2018). Students express a need to try new things and make particular suggestions regarding the change of their learning methods and everyday school processes they would prefer. They are passionate and motivated learners who devote time and effort in discovering what they desire to know (Thomas, 2012). Families encourage and support the implementation of innovative projects and often make their own suggestions, as well.

Academic emphasis is placed on personal, social and civic skills, apart from academic knowledge, which are all developed through projects and teaching processes designed internally by the teaching staff of the school. The target skills of the particular projects are determined according to suggestions made by institutions about the skills held to be useful for the future citizens and employees, as well as the perceptions held, discussed and determined by the teachers themselves. Creativity and divergent thinking are praised. Challenges and resources are given to students who are encouraged to think in a variety of unpredicted ways. The development of digital literacy is, also, emphasized through the design of learning tasks that enhance relevant skills. The headteacher and the teachers spend time together in order to design their own school specific innovative projects, on which they base their everyday activities and teaching. Bottom-up initiated change is the goal, as it is recognized that internally decided and implemented change is highly likely to be more successful and meaningful to every school context (OECD, 2018).

3.6. Preliminary Qualitative Research

3.6.1. Methodology and tool.

The preliminary qualitative research stage included four, semi-structured interviews, which gave the researcher the chance to guide the discussion towards specific areas of interest but, also, allowed the participants to freely express their opinions within these areas. The objective of the use of the preliminary interviews was to provide a general frame of the conceptualization of core concepts of the present research that have been analyzed in the theoretical framework. The qualitative findings of the preliminary interviews were used with the objective of the enhanced development of the questionnaire used in the core quantitative stage. In addition, the combination of the results of the preliminary interviews with results from other stages contributed to the enrichment and triangulation of the research findings.

The dimensions chosen for investigation, at this stage, included the participants' conceptualization of key research concepts, namely:

- the concept of school culture, in general
- school culture and the prevalent values and beliefs in the Greek primary education
- the relationship between school culture and the choice of teaching and learning practices
- 21st century skills
- the development of the 21st century skills in the Greek primary education
- the introduction of change in teaching practices

The interviewer's guide, as it was formed according to the aforementioned concepts, included the following six questions:

1. What comes to your mind when you hear the expression "school culture"?
2. How would you describe school culture in primary education in Greece? Which values and beliefs are prevalent?
3. Does the current school culture affect the choice of learning practices? If yes, how?

4. What skills do you think that will be useful for the future of current primary education students?
5. Does the current school culture and relevant practices favor the development of these skills?
6. What comes to your mind when you hear the expression “change of teaching practices”?

3.6.2. Sample

A number of teachers and headteachers were contacted and invited to take part in the interviews. Out of the teachers that voluntarily offered to participate, the final sample was purposively selected in such a way as to cover a wide range of work experience levels (8-32 years) and to be representative of the sex composition of the research population. In particular, both sexes were represented according to the percentage of 1 male to 3 female teachers reported by the Centre of Development of Educational Policy in its latest report of the teacher population in primary education in Greece (2016) and the data offered by the Regional Administration of Primary Education of Crete, which particularly refer to the teacher population in the region of Crete (see Table 22). Out of the 4 participants, 3 were primary education teachers and 1 was a primary school headteacher. The participants’ information is presented in Table 7.

	Work post	**Work experience**	**Sex**
Participant 1	Teacher	8 years	Male
Participant 2	Teacher	10 years	Female
Participant 3	Teacher	21 years	Female
Participant 4	Headteacher	32 years	Female

Table 7. Preliminary interviews participants

The interviews were conducted at a time and place of the participants’ choice. Before the start of the interview, the participants were given a consent form to read and sign (see Appendix, Item 1). Each interview lasted about 10-15 minutes.

3.6.3. Results

The results from the responses to the questions of the preliminary interviews are presented as follows.

Question 1: What comes to your mind when you hear the expression “school culture”? All participants had difficulty answering the question and took their time to reply. The answers included the aspects of school rules, objectives (“what the school wishes to offer the students”, Participant 4), where focus is placed, everyday school life and the general environment, discussions with students, the lessons. Participant 2 placed emphasis on the role of society, describing school culture as “the educational style with regards to society”, while participant 1 mentioned the aspect of communication among teachers. The same participant gave examples of school culture as a variable characterized by whether there is freedom for personal choice, flexibility regarding activities, team work or how decision-making processes are formed.

Question 2: How would you describe school culture in primary education in Greece? Which values, beliefs are prevalent?

A recurrent issue in the replies to this question was the focus placed on the knowledge transfer to the student, regarding which there are directions and limits communicated by the central education management with the expense of limited time left for the development of social, personal and interpersonal skills. Participant 3 highlighted that the “psychological aspect of the student is, almost, ignored”. Participant 2 replied that there are no directions regarding the development of the social, personal aspect; it is up to the teacher to address these issues according to his personal beliefs and will. In general, teachers said that they try to socialize students and inspire participation. Team working, cooperation and participation were presented as core values for both students and teachers. Regarding teacher relationships, though, participant 1 pointed out that the cooperation is not meaningful and does not aim at innovation. The participants agreed that there is a high level of flexibility regarding personal choices, independence in the classroom and increased participation in decision-making processes. The role of the headteacher is recognized as particularly important. Participant 1 mentioned that there has been some small change regarding school culture lately, especially with the employment of a great number of younger teachers. Even though new approaches are being introduced, though, “the very high percentage of older teachers keeps education practices in the past”.

Question 3: Does the current school culture affect the choice of learning practices? If yes, how?

All participants agreed that the current school culture affects the choice of learning practices. Participant 2 claimed that team working, helping and cooperation are promoted through learning procedures, while participant 3 expressed her worries that recently introduced change regarding teaching hours organization does not allow time for in-classroom discussion, pointing to a practical aspect that affects the choice of teaching methods. Participant 4 also pointed to a variety of practical issues that affect the results of any educational attempt. Having been an educational projects director for 8 years in the past, she highlighted how participation in these projects helped teachers shift their teaching procedures towards experiential learning. She pointed out, however, that these projects were faced with fear initially, with the unions playing a negative role in the acceptance of them, as "they do in the introduction of any change". Participant 1 added that, although some small changes have taken place lately, introduction of change in the Greek educational system is met with difficulty because teachers are suspicious towards anything new and tend to disagree with any change, constantly complaining about the lack of support by the Ministry of Education, even though they might change their opinion later. In general, he argued that, although there is freedom to try new things there is no support or cooperation towards this goal and teaching methods are stagnant in their core despite the existence of exceptions.

Question 4: What skills do you think will be useful for the future of current primary education teachers?

All participants agreed that personal development, especially with regards to social and communication skills, is of high importance. Team working, cooperation, social flexibility and relationship management were mentioned as skills expected to be of heightened significance. The ability for self-development, self-management of skills and strengths with the aim of answering to challenges posed by society, occupation or family were, also, added. Participants 1 and 2 mentioned information management techniques as an essential ability in the current and future world of information abundance. Participant 1, also, mentioned technology literacy, foreign languages and complex problem- solving.

Question 5: Does the current school culture and relevant practices favor the development of these skills?

Participants agreed that this depends heavily on the teacher's personal beliefs regarding the role of education but is negatively affected by a prevalent emphasis on hard skills and fact learning, as well as an overloaded curriculum. Participant 1 claimed that teaching practices and coursebooks do not develop in ways and rates proportionate to the rate of change, technology is not adequately used, while education is, still, built around the use of things and concepts of the present and the past rather than the future. As he claimed, "we use things that will be useless in the future, such as the pencil and the rubber. We are doing math calculations when in everyday life, even in the present, let alone in the future, we will only use calculators". In general, participants seem to believe that current teaching practices favor the development of future skills, whatever these may include depending on each participant's view, only to a very small extent, with the exception of the case of European education programs which promote the aforementioned skills when implemented according to participant 3.

Question 6: What comes to your mind when you hear the expression "change of teaching practices"?

All participants agreed that a change of teaching practices is desirable and essential. There is a recognized need for a shift from an over-emphasis on content knowledge and fact learning towards a more open and flexible school, which takes into account the social conditions and needs, and which allows the student to develop his/ her personal strengths beyond persistence for excellence and unhealthy competitiveness. Participant 1, though, mentioned that since change is mostly introduced via a top-down route without the participation of the teachers in its design and implementation, it is faced with suspicion and doubt regarding hidden objectives, consequently being rejected, at least initially. As a result, introduction of new teaching practices is, also, regarded as enforcement rather than suggestion. Participant 2, highlights, however, that since "society moves on, the school cannot stay behind, it has to run to catch the social needs".

3.6.4. Findings.

The analysis of the interviewees' responses sheds light to some specific issues and unfolds a number of ideas and concerns. What is initially revealing is the difficulty faced by all respondents when they attempt to discuss the term "school culture",

something possibly attributed to the deeply unconscious nature of the aspect, which is repeatedly recognized throughout literature.

Regarding prevailing culture attributes, Greek primary education is presented to be characterized by in-classroom flexibility, autonomy and teacher independence, but also by an emphasis on knowledge transfer and hard skills which is dictated by an overloaded curriculum. The result is a neglect of the personal and social development of the student, which is a concern expressed by all the interviewees, since interpersonal, social and communication skills are regarded as crucially important for the future citizens. As a result, it is highlighted that current teaching practices, as are dictated by the prevalent school culture, only favor the development of such skills to a very small extent. This, inevitably, poses the need for change, which is recognized by all interviewees and seen as something desirable. However, there is, also, an identified prevailing fear and suspicion of any change introduced or suggested, an example of which being the teachers' initial unwillingness to implement European projects, and a lack of support and meaningful cooperation among teachers towards innovation.

3.7. Core Quantitative Research

3.7.1. Methodology and tool

The quantitative questionnaire used in the core stage of the research was designed on the basis of six school culture dimensions. The process through which these dimensions were determined included the analysis of the following features:

- the variables included in a number of culture measurement tools used in relevant past research
- the findings from the qualitative interviews of the first stage of the current research
- the particularities of the Greek educational system, as they are discussed in relevant literature
- the 21st century skills, as they are proposed by various institutions and discussed within the context of primary education.

Researchers have repeatedly attempted to measure school culture as an entirety, as well as through distinct aspects identified. In this attempt, a variety of measurement tools

have been designed, based on the recognition of a range of variables that needed to be measured for a better understanding of school culture to be achieved. Some of the questionnaires used in the past for this aim, along with the corresponding variables under investigation, the number of items included and the role of the respondents, are presented in the Table 8 below. The particular questionnaires were utilized in surveys that have taken place in the United States of America, Canada, Spain, Cyprus, the United Kingdom and Greece.

Questionnaire	**Variables**	**Items**	**Respondents**
School culture survey, USA (Saphier & King, 1985)	1) Collegiality 2) Experimentation 3) High expectations 4) Reaching out to knowledge 5) Appreciation and recognition 6) Professional respect 7) Caring celebration, and humor 8) Protecting what's important 9) Traditions 10) Tangible support 11) Decision-making 12) Honest, open communication 13) Initiative 14) Collective responsibility 15) Efficaciousness 16) Continuous improvement and non-defensiveness 17) Reflective environment 18) Goals 19) Core values	29	Teachers
Comprehensive assessment of school environments, USA (CASE) (NASSP, 1986, In Lunenburg, 2011)	1)Teacher-student relationships 2) Security and maintenance 3)Administration 4) Student academic orientation 5) Student behavioral values 6) Guidance 7) Student peer relationships 8) Parent and school relationships 9) Instructional management 10) Student activities	38 (stud.) 48 (parents) 60 (teachers and administr.)	Students, teachers, administrators and parents

Organizational climate description for Elementary schools Revised, USA (OCDQ-RE), (Hoy, Tarter, Kottkamp, 1991)	1) Supportive principal behavior 2) Directive principal behavior 3) Restrictive principal behavior 4) Collegial teacher behavior 5) Intimate teacher behavior 6) Disengaged teacher behavior	42	Teachers
Organizational healthy inventory for Elementary schools, USA (OHI-E), (Hoy, Tarter, Kottkamp, 1991)	1) Institutional integrity 2) Collegial leadership 3) Resource influence 4) Teacher affiliation 5) Academic emphasis	37	Teachers
School culture triage survey, USA, Canada, United Kingdom (Philips, 1996, Philips &Wagner, 2002, Wagner & Masden-Copas, 2002, in Wagner 2006)	1) Professional collaboration 2) Affective and collegial relationships 3) Efficacy or self-determination	17	Teachers and administrators
La cultura de la colaboración, Spain (Armengol Asparó, 2001)	1) Purposes and values 2) Curriculum 3) Task assignment 4) Intervention in the work dynamics 5) Professional interaction 6) Management 7) Pedagogical coordination 8) Innovation 9) Conflict 10) Teacher training 11) Climate	37	Teachers
The school climate, Cyprus (Pasiardi, 2001)	1) Communication 2) Cooperation 3) Organization and administration 4) The students	28	Teachers
School climate assessment in secondary education, Greece (Zmpainos & Giannakoura, 2010)	1) Relationships among teachers 2) Satisfaction from school management 3) Participation in the decision-making process and influence	28	Teachers Students

4) Consent and cohesion 5) Vagueness of role, routine 6) School- family cooperation 7) Student interest for learning 8)Emphasis on school achievement 9) Expectations from students 10) Relationship with students 11) Order and discipline 12) Relationships among students 13) Planning, change 14) Morale 15) Facilities and equipment

Table 8. School culture measurement tools

3.7.1.1. School culture dimensions.

Following the study of the survey measurement tools presented above, a table of six dimensions of school culture is generated. These dimensions are held to cover the vast majority of the school culture aspects and, particularly, refer to prevalent values and morale, relationships, management, the student and the environment, academic emphasis, innovation and change. The dimensions are, further, analyzed in numerous relevant variables, always according to the investigation of the survey tools aforementioned.

Values and morale	purposes, beliefs, traditions, order and discipline, efficacy, self-determination, initiative, collective responsibility, institutional integrity, professional behavior, appreciation, recognition, respect, caring, celebration, humor, support, guidance, communication, team working
Relationships	teacher to teacher relationship, affiliation, professional collaboration and interaction, teacher to student relationship, student to student relationship, school- family relationship, conflict
Management	administration, leadership, task assignment, communication, decision-making, participation, influence, resource influence, facilities and equipment, security and maintenance, principal behavior, instructional management
The student and the environment	student activity, student behavioral values, student interest for learning, reflective environment
Academic emphasis	expectations, student academic orientation, curriculum, goals, pedagogical coordination
Innovation and change	planning, intervention in the work dynamics, teacher training, continuous improvement

Table 9. School culture dimensions from the culture measurement tools

The preliminary qualitative interviews conducted within the current research have, also, shed light to a number of issues, as they have been discussed in Chapter 3.6. Dimensions identified through the categorization of variables that were mentioned and analyzed by the interview participants have been found to coincide with the six dimensions aforementioned to a considerable extent and are, thus, presented in Table 10.

Values and morale	personal initiative, cooperation, collegiality, team working, participation
Relationships	teacher independence, in-classroom autonomy, cooperation and team-working (mainly outside the classroom)
Management	increased participation in decision-making at the school level, in- classroom flexibility
The student and the environment	the role of society, psychological aspect of the student
Academic emphasis	objectives, over-emphasis on knowledge transfer and hard skills, overloaded curriculum, neglect of the personal and social development, importance of interpersonal and social communication skills, of social flexibility, relationship management, self- management of strengths, autonomy, information management techniques, technology literacy, foreign languages, complex problem-solving
Innovation and change	need for change, fear and suspicion towards introduction of change, cooperation towards innovation, professional experience and change, the role of the unions

Table 10. School culture dimensions from the preliminary interviews

At this point, it is considered important that the particularities of the Greek educational system, as they have been discussed in Chapter 2.4 are taken into consideration in the discussion of the dimensions and variables of school culture in the country. For this reason, relevant significant attributes of the Greek educational system are presented in Table 11, with the aim of a geographical and systemic contextualization of the dimensions under discussion.

Values and morale	control over compliance, uniformity and coherence, inflexibility, inertia, introversion, development dependent on personal initiative and intrinsic motivation
Relationships	trust, importance of collaboration, warmth of interpersonal relationships, satisfaction by school management
Management	centralized governance, instability and fragmentation, top-down decision-making, comparatively small school units, guaranteed life-long employment, importance of

	professional development, minimum incentives, lack of system evaluation
The student and the environment	economic crisis, student performance under the OECD average but showing significant improvement in the area of mathematics in the past decade, engagement, student happiness and positive expectations considerably lower than OECD average
Academic emphasis	aim of introduced reforms: differentiated teaching, inclusion, support for innovation, promotion of creativity, intercultural cooperation, democracy, social equity, environment consciousness, digital literacy, full integration of ICT in curriculum and everyday school practice
Innovation and change	suspicion, resistance to change, negative reform implementation results, delay, shortcomings, need for reform

Table 11. School culture dimensions from the particularities of the Greek educational system

Throughout the discussion of school culture in the current research, special emphasis is placed on the recognition and study of skills and competencies expected to be of great significance for the human, citizen and professional of the future. These skills and competencies are perceived as a compass for educational goals and objectives and, consequently, for change initiatives. For this reason, it is considered vital that such skills, as they are identified and mentioned in relevant literature, are taken into account, at this point, as variables under the dimension of academic emphasis.

Academic emphasis
creativity, divergent thinking, critical thinking, team working (especially in heterogeneous groups), work autonomy, developed cognitive and interpersonal skills, social and civic competences, responsible national and global citizenship, consciousness of interdependence, acceptance and understanding of diversity, recognition and development of personal attributes, interactive use of tools, communication in mother tongue and foreign languages, mathematical and science competence, digital competence, sense of initiative and entrepreneurship, accountability, leadership, cultural awareness and expression, physical well-being.

Table 12. Skills expected to be of significance in the future

By bringing together the analysis of the school culture dimensions appearing in the survey measurement tools, the qualitative research conducted in the initial stage of the current study, the literature review of the particularities of the Greek educational system and the 21st century skills, as they have been identified by various institutions, we are provided with a coherent basis for a thorough investigation of school culture. For the purposes of the current research, the particular six dimensions aforementioned have

been used for the design and development of the survey questionnaire utilized. To this basis, we, also, added the manifestations of culture presented in Table 5 of Chapter 3.3, as aspects for investigation by the survey. In this process, emphasis is placed on a range of variables categorized under the aforementioned dimensions, which are, further, related to the concepts of change and innovation within the learning procedure. The six dimensions and their variables that form the basis of the development of the questionnaire used for the aims of the current research are, collectively, presented in Table 13 below and analyzed further on.

Values and morale	purposes of education, aim and mission, assumptions and beliefs, stability, safety and control VS risk taking, flexibility and discretion, strength and homogeneity of values, initiative
Relationships	communication, feelings and cooperation among the headteacher, the teachers, the students, the family
Management	leadership, decision-making, instructional management, flexibility, participation, organizational structures
The student and the environment	student behavioral rules, interest for learning, the role of the family and the society, the psychological aspect of the student, student happiness and engagement
Academic emphasis	expectations, goals, curriculum, learning emphasis, 21st century skills, teaching and learning practices, rules, award and punishment
Innovation and change	change needs, feelings towards introduction of change, implementation of change and innovation, resistance, teacher training, planning

Table 13. The school culture dimensions and their variables that informed the development of the survey tool

In further detail, the dimension of values and morale was investigated through the teachers' and headteachers' perceptions regarding the aims and purposes of the school. Emphasis was placed on the study of individual and collective beliefs stemming from ideas concerning the mission of education and how these affect the school position in the spectrum of stability, safety and control versus risk taking, flexibility and discretion. This position of the school culture is held to have a great impact on its predisposition towards change and the existence or lack of relevant initiatives. This impact is believed to be even greater depending on the level of the strength and homogeneity of the values in question.

Relationships are a major part of school culture, as it has been analyzed in detail in Chapter 2. For this reason, they are identified as a core dimension in the current study. The level and character of the communication developed among the core stakeholders of the school unit, namely the headteacher, the teachers, the students and their families, is held to be a variable that greatly affects school culture, in general, and its position towards change and innovation, in particular. Meaningful cooperation and feelings of trust and interdependence are found to enhance change management and the introduction of innovation and were, thus, emphasized.

The role of the headteacher is, always, discussed under the light of its heightened importance in the formation of the culture of every educational unit. Leadership, even beyond management, is regarded to provide a compass in the search of the school's individual identity. For this reason, the values and practices underlying the ways leadership and management are performed, decisions are taken, and administration issues are resolved were studied, within the aims of the current research. The existence or lack of instructional management and the directions communicated, as well as the opportunities offered for participation, bottom-up planning and flexibility were emphasized, as they are held to be especially related to the concepts of change and innovation.

The student is the center and essence of education. The identity of the student population is a factor that has a great impact on any educational attempt, process and result. The feelings that the student experiences in the school environment, his/ her interest for learning and consequent levels of engagement are considered to be factors that majorly affect the formulation of the school culture and were, thus, investigated, especially with regards to the introduction of teaching practices aiming at 21st century skills.

The purposes and aims of the school are translated into specific academic emphasis areas, around which the curriculum and the variety of teaching and learning practices in use are built and developed. The basis of this system is constructed on the choice of skills and competencies that are believed to be vital for the future of the student. With an eye on the competencies identified as vital for the humans, citizens and professionals of the future world by several institutions, the current research wished to investigate the

skills and competencies that attract heightened attention within the Greek educational system, through the teaching goals set and the practices adopted. Emphasis was placed on practices related to the development of personal, social and civic competencies.

Innovation and change are mentioned as the final dimension of the current study. In fact, they represent a concept that determines the variables selected under all the discussed dimensions. The reason why they are identified as a distinct factor in the study of school culture is that the particular research wishes to shed light to specific related factors that were reported to be characteristic of the Greek educational system, such as increased resistance to change, feelings of suspicion towards the introduction of innovation, as well as delays and shortcomings in attempts of educational reform. The identification of change needs is held to be the basis of any attempt for change and is, thus, given special emphasis as it is, also, related to the variables of teacher training and planning for change.

3.7.1.2. Questionnaire assessment.

3.7.1.2.1. Questionnaire assessment tool development.

The assessment of the questionnaire, the core quantitative research tool, was conducted in the form of a survey itself. The items of the two versions of the questionnaire, for the teachers and the headteachers were assessed according to their importance, pertinence to the research aims and objectives, and univocity.

For each of the two versions of the questionnaire, an adapted assessment version was created, which included the aforementioned three aspects-columns. Each of the eleven items and their corresponding sub-items, 44 in total, were assessed. For the assessment of the importance and pertinence of the items and sub-items, a five-level rating scale was used. The univocity of the items and sub-items was approached as a nominal value, thus, allowing a YES or NO response.

3.7.1.2.2. Sampling.

The assessors of the survey tool were selected through purposive sampling. More specifically, for the assessment of the teachers' questionnaire, four university professors specializing in issues of education, one primary and secondary education school counsellor and a teacher were contacted, as is presented in Table 14 below. The

researcher placed more emphasis on the particular version of the questionnaire aiming at a wider sample of respondents for its assessment compared to the assessment of the headteachers' questionnaire, on the recognition of the fact that the teachers' version, in fact, functions as the basis for the design of the headteachers' version.

Name	Description
Dr. Mònica Feixas Condom	Tenured lecturer and tutorship coordinator, Department of Applied Pedagogy, Autonomous University of Barcelona, Spain Research interests: change and innovation in educational organizations, learning transfer of initial training of university teachers, and learning cultures in higher education.
Dr. Aleix Barrera Corominas	Research technician and adjunct professor, Department of Applied Pedagogy, Autonomous University of Barcelona, Spain Research interests: evaluation of training (transference and impact), the accreditation of learning and organization development.
Dr. David Rodríguez Gómez	Tenured lectured, Department of Applied Pedagogy, Autonomous University of Barcelona, Spain. Research interests: organization development, organizational learning, creation and management of knowledge in educational organizations and communities of practice and learning
Dr. Konstantinos Fasoulis	Professor, Department of Pedagogy in Primary Education, National and Kapodistrian University of Athens, Greece Research interests: educational administration and development, educational policy, administration of higher education, contemporary issues of organization, administration and human resources development in education
Mrs. Despoina Aggelidaki	School counselor in the specialty of English language in Primary and Secondary Education, Prefectures of Heraklion and Rethymno, Greece
Mr. Leonidas Chalkiadakis	Primary education teacher, Greece

Table 14. Assessors of the questionnaire aimed at teachers

For the assessment of the questionnaire aimed at primary education headteachers, a number of headteachers were contacted. The details of the headteachers that accepted to participate in the procedure can be found in the Table 15.

Name	Description
Mr. Michalis Andreadakis	Headteacher, Primary school of Megali Vrysi, Greece
Mr. Vasileios Lilitsis	Headteacher, 2nd Primary school of Aghia Marina, Greece
Mr. Charalampos Stefanatos	Headteacher, 2nd Primary school of Voutes, Greece

Table 15. Assessors of the questionnaire aimed at headteachers

3.7.1.2.3. Results.

The analysis of the results of the questionnaire assessment survey is conducted on two levels, namely individually on the level of every alternative response/ sub-item of the 44 included in the questionnaire, and collectively on the level of each one of the 11 items. A median is derived for the importance, pertinence and univocity of every assessed sub-item and item. Since importance and pertinence are assessed on the basis of a five-rating scale, the minimum median accepted by the researcher is set, prior to the results analysis, to 4.5. In other words, in order for a sub-item, as well as an item as a whole, to be regarded as significant to be investigated and pertinent to the research aims and objectives, the median value of the collected data must be equal or above 4.5/5. In the case of the variable of the univocity, which is managed as a nominal value, the positive assessment response (YES) is given the numerical value of 1 and the negative assessment response (NO) is given the numerical value of 0, while the minimum median accepted is set to 0.8.

The assessors' rating medians are presented below in two summary tables (Table 16 and Table 19), one for each version of the questionnaire.

Assessment of the teachers' questionnaire.

The median values for each of the 44 sub-items and the 11 items of the questionnaire aimed at teachers are presented in Table 16 below.

	Imp.	**Pert.**	**Un.**		**Imp.**	**Pert.**	**Un.**		**Imp.**	**Pert.**	**Un.**
1a	4.7	4.5	0.83	**2a**	4.5	4.5	0.83	**3a**	4.8	4.8	0.83
1b	4.8	4.5	0.83	**2b**	4.3	4.3	0.83	**3b**	4.8	4.8	1
1c	4.8	4.5	0.83	**2c**	4.8	4.8	0.83	**3c**	4.8	4.8	1
1d	4.7	4.7	1	**2d**	4.8	4.8	0.83	**3d**	5	4.8	0.67
1	4.75	4.55	0.87	**2**	4.6	4.6	0.83	**3**	4.85	4.8	0.88
4a	4.7	4.7	0.83	**5a**	4.8	4.8	0.67	**6a**	5	4.8	0.83
4b	4.7	4.7	0.83	**5b**	4.8	4.8	0.83	**6b**	4.8	4.5	1
4c	4.7	4.7	0.83	**5c**	4.7	4.7	0.83	**6c**	4.5	4.7	0.83
4d	4.7	4.7	1	**5d**	4.8	4.7	0.83	**6d**	4.5	4.7	1
4	4.7	4.7	0.87	**5**	4.78	4.75	0.79	**6**	4.7	4.68	0.92
7a	4.8	4.8	0.83	**8a**	4.5	4.7	0.83	**9a**	4.5	4.5	1
7b	4.3	4.3	0.83	**8b**	4.8	5	1	**9b**	4.8	4.8	1
7c	4.7	4.8	1	**8c**	4.8	4.8	0.83	**9c**	4.7	4.8	1
7d	5	4.7	1	**8d**	5	4.8	1	**9d**	4.7	4.8	1
7	4.7	4.65	0.92	**8**	4.78	4.83	0.92	**9**	4.68	4.73	1

10a	5	5	1	**11a**	5	5	1
10b	4.8	4.8	1	**11b**	4.8	4.8	1
10c	4.7	4.8	0.83	**11c**	5	4.8	1
10d	5	4.8	0.83	**11d**	5	4.8	1
10	4.88	4.85	0.92	**11**	4.95	4.85	1

Table 16. Median values after the assessment of the teachers' questionnaire

As it can be seen from the tables above, the majority of the items achieved a median equal or above 4.5 for importance and pertinence and equal or above 0.8 for univocity and were, thus, regarded capable of producing useful data. This was not the case, though, for:

- the sub-item 2b, which was only assessed with 4.3 with regards to both significance and pertinence
- the sub-item 7b, which was only assessed with 4.3 with regards to both significance and pertinence
- the sub-item 3d, which was only assessed with 0.67 with regards to univocity
- the sub-item 5a, which was only assessed with 0.67 with regards to univocity.

Especially with regards to the assessment of the sub-items univocity, Dr Barreras commented that the reason why he assessed some of them negatively is because they attempt to approach more than one idea, namely, although they are part of the same factor they refer to different variables.

The researcher decided to first examine sub-items 2b and 7b, which were rated lower than the predetermined accepted median with regards to importance and pertinence. The sub-items are part of items 2 and 7, which examine the variables of "management" and "academic emphasis- creativity", respectively. It is held by the researcher that the notions of importance and pertinence, in essence, refer to the variable investigated by the whole item in each case rather than to each sub-item individually, since the four different sub-items, merely, reflect different levels of the same variable. In other words, it is not possible to remove only one of the four sub-items. For this reason, the median of the item, as a whole, was taken into account, as well, these being:

	Importance	Pertinence
2	4.6	4.6
7	4.7	4.65

Table 17. Medians of importance and pertinence of items 2 and 7

Attempting to delve into a deeper analysis of the assessment of the sub-items in question, the researcher decided to see the responses of the four university professors independently, as the particular assessors are believed to be the experts more aware of the notions of pertinence and importance. For each of the sub-items, the medians of the professors' assessment were as follows:

	Importance	Pertinence
2b	4.5	4.5
7b	4.5	4.5

Table 18. Medians of importance and pertinence for sub-items 2b and 7b as assessed by university professors

After the discussion of the assessment responses from the different perspectives presented above and since the two sub-items scored equal to or above the predetermined minimum median, when the responses of the university professors only were taken into consideration, the researcher decided to keep the sub-items 2b and 7b, and consequently items 2 and 7, as part of the survey questionnaire.

On the other hand, the researcher decided to review items 3d and 5a, the univocity of which was reviewed lower than 0.8, with regards to clarity of phrasing and single meaning. The univocity assessment was approached differently to the importance and pertinence assessment, based on the recognition that univocity can refer independently to one independent sentence/ sub-item and that it can be, more equally, conceived by all assessors, namely the university professors, the headteachers and the teacher.

Assessment of the headteachers' questionnaire.

The median values for each of the 44 sub-items and the 11 items of the questionnaire aimed at headteachers are presented in Table 19 below.

	Imp.	**Pert.**	**Un.**		**Imp.**	**Pert.**	**Un.**		**Imp.**	**Pert.**	**Un.**
1a	5	5	1	**2a**	5	4.7	1	**3a**	5	5	1
1b	5	5	1	**2b**	5	5	1	**3b**	5	5	1
1c	5	5	1	**2c**	5	5	1	**3c**	5	5	1
1d	5	5	1	**2d**	5	5	1	**3d**	5	5	1
1	5	5	1	**2**	5	4.93	1	**3**	5	5	1
4a	5	5	1	**5a**	5	5	1	**6a**	5	4.7	1
4b	5	5	1	**5b**	5	5	1	**6b**	4.7	5	1
4c	5	5	1	**5c**	5	4.7	1	**6c**	4.7	5	1
4d	5	5	1	**5d**	5	5	1	**6d**	5	4.7	1
4	5	5	1	**5**	5	4.93	1	**6**	4.85	4.85	1

7a	5	5	1	**8a**	5	5	1	**9a**	5	5	1
7b	5	4.7	1	**8b**	4.7	4.7	1	**9b**	4.7	5	1
7c	5	5	1	**8c**	5	5	1	**9c**	5	5	1
7d	5	5	1	**8d**	5	5	1	**9d**	5	4.7	1
7	5	4.93	1	**8**	4.93	4.93	1	**9**	4.93	4.93	1
10a	5	5	1	**11a**	5	5	1				
10b	5	5	1	**11b**	5	4.7	1				
10c	5	4.7	1	**11c**	5	5	1				
10d	5	5	1	**11d**	5	5	1				
10	5	4.93	1	**11**	5	4.93	1				

Table 19. Median values after the assessment of the headteachers' questionnaire

As it can be seen in Table 19 above, all items and sub-items achieved a median equal or above 4.5 for importance and pertinence and equal or above 0.8 for univocity and were, thus, regarded capable of producing useful data. However, the researcher decided to incorporate the changes made following the assessment by the first group of experts in the sub-items 3d, 5a of the teachers' version in the headteachers' questionnaire, as well. This decision was taken for two reasons.

- Based on the fact that the first group of the assessors includes university professors specializing in issues of education. It is, thus, held that the assessment conducted by this group is based on a wider and deeper basis of knowledge and expertise.
- For reasons of uniformity between the two versions of the questionnaire. In order for the results of the survey to be comparable, they have to be derived from the same or, at least, most similar possible items. As a result, the researcher decided to allow only minor alterations in phrasing necessitated by the different perspective of the respondents in each case.

Incorporation of the assessment results in enhanced questionnaires

After the analysis of the assessment results, the researcher decided to adapt the following sub-items of the teachers' and headteachers' questionnaires as it can be seen in Table 20. The reviewed questionnaires that were delivered to the participants can be found in the Appendix (Items 2 and 3).

	Pre-assessment version	Post- assessment version
3d	Teachers in our school cooperate meaningfully and on a daily basis, exchanging ideas in order to design, plan and implement new school specific teaching processes and innovative projects.	Teachers in our school cooperate on a regular basis in order to design and implement new school specific teaching processes and innovative projects.
5a	Families intervene to block the introduction and implementation of new teaching practices and innovative projects. They only believe in the effectiveness of traditional methods and negatively judge the teachers who do not use them.	Families only believe in the effectiveness of traditional methods and negatively judge the teachers who do not use them.

Table 20. Adapted items according to teachers' and headteachers' questionnaire assessment

3.7.2. Sample

The research sample includes teachers of various specializations and headteachers of primary schools located in the region of Crete, Greece. The participants of the research were selected through stratified random sampling, so as to ensure that teachers and headteachers would be represented in the sample according to the population composition. There was an attempt to approach the sample personally with visits to schools, to the extent that this was attainable, as personal communication with the potential respondents was expected to produce higher response rates. At the same time, the electronic mails of schools throughout the region of Crete, which are available on the official sites of regional education offices, were used in order for more participants to be reached.

3.7.2.1. Analysis of the population of the survey.

The population of the current research includes the teachers and headteachers of the public primary schools of Crete, Greece. The characteristics of the population were analyzed according to statistical data offered by the Regional Administration of Primary Education of Crete.

The figures that were used for the analysis of the current research population are the ones presented in Tables 21 -24 below. The particular figures have been derived from statistical data gathered at the end of the academic year 2016-2017 and refer to the

teaching staff and the headteachers of the 336 school units functioning in the region of Crete (Table 21).

	Number	**Percentage**
Teaching staff and headteachers	6,134	100%
Teaching staff	5,810	94,72%
Headteachers	324	5,28%

Table 21. Teaching staff and headteachers: numbers and percentages (2016-2017)

According to Table 22 below, the majority of the teaching staff are women. In addition, general education teachers are more in number compared to specialty teachers.

	Number	**Percentage**
Teaching staff	5,810	100%
Female teachers	4,321	74.37%
Male teachers	1,489	25.63%
General education teachers	3,526	60,69%
Specialties in total	2,284	39,31%

Table 22. Teaching staff: numbers and percentages (2016-2017)

The composition of the population of the specialty teachers is presented in Table 23 below.

	Number	**Percentage**
Specialties in total	2284	100 %
Foreign language teachers	730	31,97%
Physical education teachers	446	19,53%
Computer science teachers	273	11,95%
Music teachers	214	9,37%
Other	621	27,18%

Table 23. Specialty teachers: numbers and percentages (2016-2017)

The composition of the headteachers´ population as far as sex is regarded is presented in Table 24. It has to be mentioned that all headteachers are general education teachers.

	Number	**Percentage**
Headteachers	324	100%
Female headteachers	153	47,22%
Male teachers	171	52,78%

Table 24. Headteachers: numbers and percentages (2016-2017)

3.7.2.2. Target sample.

The target sample size of the current research is calculated with the use of the Slovin's Formula. The formula is used for finite populations characterized by many unknown

parameters, in order to give the researcher an idea of the sample size needed for a reasonable accuracy of results to be ensured (Ellen, 2018), namely:

$$n = N / (1 + Ne^2)$$

where n = sample size, N = total population and e = error tolerance.

For the needs of this research, the confidence level is set at 95% and the margin error at 0.05%. Consequently, applying the formula for the total population of 5,810 public primary school teachers, we get the following result:

$$n= 6,134/ (1+6,134 \times 0.05^2) = 376$$

According to the formula and rounding the result to the closest whole number, the research target sample is 376 primary education teachers and headteachers.

Consequently, applying the percentages presented in the tables above to the particular target sample size, the ideally representative sample would be consisted by the following percentages of respondents presented in Tables 25-28. All numbers are rounded to the closest whole number.

	Percentage	**Number**
Teaching staff and headteachers	100%	376
Teaching staff	94,72%	356
Headteachers	5,28%	20

Table 25. Teachers and headteachers target sample in percentages and numbers

A greatest number of women teachers compared to men, and of general education teachers compared to specialties would make the target sample more representative of the population, according to Table 26.

	Percentage	**Number**
Teaching staff	100%	356
Female teachers	74,37%	265
Male teachers	25,63%	91
General education teachers	60,69%	216
Specialties in total	39,31%	140

Table 26. Teaching staff target sample in percentages and numbers

The number of teachers per specialty for the target sample are presented in Table 27.

	Percentage	Number
Specialties in total	100 %	140
Foreign language teachers	31,97%	45
Music teachers	9,37%	13
Physical education teachers	19,53%	27
Computer science teachers	11,95%	17
Other	27,18%	38

Table 27. Specialties target sample in percentages and samples

The sex composition of the headteachers´ target sample is presented in Table 28.

	Percentage	Number
Headteachers	100%	20
Female headteachers	47,22%	9
Male teachers	52,78%	11

Table 28. Headteachers target sample by sex in percentages and samples

3.7.2.3. Actual sample.

The actual sample of the survey conducted in the core quantitative stage of the present research exceeded the target sample in size, including 416 teachers and headteachers.

The population of the research, the target sample and the actual sample are collectively presented in the Tables 29-32. The first two numerical columns show the teachers and headteachers numbers and percentages in the region of Crete, categorized according to the variables of specialty and sex. The third column shows the target sample numbers. The fourth and fifth numerical columns show the actual sample of the research in absolute numbers, as well as percentages. Finally, the sixth and seventh columns provide a comparison of the target and the actual sample in absolute numbers and percentages.

	Population		Target sample	Actual sample		Actual sample evaluation	
	N	%	N	N	%	N	% difference
Teaching staff &headteachers	6134	100%	376	416	100%	+40	0
Teaching staff	5810	94,72%	356	385	92,55%	+29	-2.17
Headteachers	324	5,28%	20	31	7,45%	+11	+2.17

Table 29. Teachers and headteachers actual sample evaluation

There has been an attempt for the composition of the sample, with regards to the variables of sex and specialty, to reflect the composition of the target sample, and eventually the research population. In all cases, the absolute numbers of the actual sample exceeded the target sample. The percentage differences between the target and the actual sample are not considered significant (Table 30).

	Population		**Target sample**	**Actual sample**		**Actual sample evaluation**	
	N	%	N	N	%	N	% difference
Teaching staff	5810	100%	356	385	100%	+20	0%
Female	4321	74,37%	265	281	73%	+16	-1.37%
Male	1489	25,63%	91	104	27%	+13	+1.37%
General education teachers	3526	60,69%	216	240	62,34%	+24	+1.65%
Specialties	2284	39,31%	140	145	37,66%	+5	-1.65%

Table 30. Teaching staff actual sample evaluation

The specialty composition of the actual sample is very similar to the specialty composition of the target sample, so the sample is considered satisfyingly representative (Table 31).

	Population		**Target sample**	**Actual sample**		**Actual sample evaluation**	
	N	%	N	N	%	N	% difference
Specialties	2284	100%	140	145	100%	+5	0%
Foreign languages	730	31,97%	45	48	33,10%	+3	+1.13%
Music	214	9,37%	13	15	10,34%	+2	+0.97%
Physical education	446	19,53%	27	27	18,63%	0	-0.9%
Computer sc.	273	11,95%	17	18	12,41%	+1	+0.46%
Others	621	27,18%	38	37	25,52%	-1	-1.66%

Table 31. Specialties actual sample evaluation

The composition of the actual sample of the headteachers with regards to sex is presented in Table 32. Some differences between the target sample numbers and the actual sample numbers are observed.

	Population		Target sample	Actual sample		Actual sample evaluation	
	N	%	N	N	%	N	% difference
Headteachers	324	100%	20	31	100%	+11	0%
Female	153	47,22%	9	7	23%	-2	-24.22%
Male	171	52,78%	11	24	67%	+13	+14.22%

Table 32. Headteachers actual sample evaluation

As it can be seen by the comparison of the absolute numbers of the target and actual samples, the data collection resulted in a satisfyingly high number of responses in almost all variable categories, with the exception of women headteachers and other specialties, where the actual sample is slightly smaller than the target sample. Further comparing the percentages of the variable categories of the population/ target sample and the actual sample, it becomes evident that the actual sample has achieved to be a very close representation of the population. Differences between the percentages of the actual sample and the population/ target sample only range from 0% to +/-2.17%. Once again, it is recognized that in the case of the actual headteacher sample, any analysis by sex would have to be conducted with caution due to the evident difference between the target sample and actual sample composition percentages.

3.7.3. Results and findings

In this chapter, the data gathered from the responses of the 385 teachers and the 31 headteachers that participated in the survey are to be presented. In order for the analysis to be better understandable the school culture types previously presented are shown in Table 33. Type A and Type B are, sometimes, combined and referred to as “change negative” culture types, whereas Types C and D are, sometimes, referred to as “change positive” culture types.

Type A	Change rejective school culture
Type B	Change resistant school culture
Type C	Change friendly school culture
Type D	Change creative school culture

Table 33. School culture types

The 11 items of the questionnaire are, also, collectively presented in Table 34.

Item 1	Purpose of education
Item 2	Management
Item 3	Teacher collaboration
Item 4	Students in our school
Item 5	The families
Item 6	Academic emphasis; personal, social and civic skills
Item 7	Academic emphasis; creativity
Item 8	Teaching resources
Item 9	Academic emphasis; geographical scope
Item 10	Innovation
Item 11	Beliefs regarding change

Table 34. Questionnaire items

3.7.3.1. Results from the teachers´ responses.

According to the analysis of the questionnaire responses given by teachers, the actual school culture in primary schools in Crete is characterized by a mix of features from all four culture types. The dominant school culture type is Type C (M: 33.52). Types D, B and A follow in that specific order. With regards to the desired school culture type, the data analysis shows that the culture type most desired by the respondents is majorly characterized by features of culture Type D (M: 45.53) and, then, Type C (M: 38.76). Type B and especially Type A culture characteristics are represented by smaller percentages, as it can be seen in Table 35 and Figures 3 and 4.

Actual school culture (Mean)				Desired school culture (Mean)			
Type A	Type B	Type C	Type D	Type A	Type B	Type C	Type D
17,72	22,53	33,52	26,22	6,06	9,65	38,76	45,53

Table 35. Mean percentages for the four culture types of the actual and the desired school culture

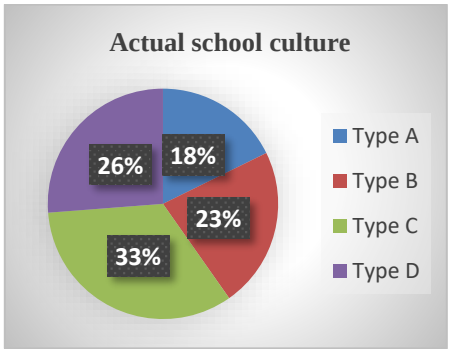

Figure 3. Composition of the actual school culture

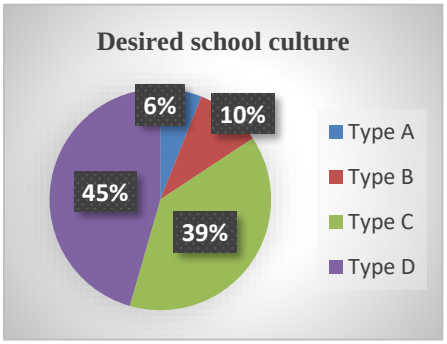

Figure 4. Composition of the desired school culture

3.7.3.1.1. Value gaps between the actual and the desired school culture.

According to the data, the biggest positive differences between the actual and the desired school culture were in Type D, in all items. The biggest negative differences were in Type A for items 1,3,5,9 and 10 and in Type B for items 2,4,6,7,8 and 11. The widest value gaps are found in Item 5 (+23.30, Type D), Item 10 (+22.47, Type D), Item 11 (+22.20, Type D) and Item 3 (+21.24, Type D). It must be also, noted down, that in Item 5 there is one of the widest negative value gaps in Type A (-20.27) and the widest value gap between the change negative and the change positive culture types combined (-39.89).

	Type A	Type B	Type C	Type D
Item 1	-13,05	-10,30	5,31	18,03
Item 2	-5,92	-6,42	0,94	11,40
Item 3	-14,56	-13,32	6,64	21,24
Item 4	-13,17	-14,92	8,31	19,78
Item 5	-20,27	-19,62	16,59	23,30
Item 6	-11,84	-20,38	12,01	20,21
Item 7	-11,99	-13,51	6,99	18,50
Item 8	-7,39	-11,72	1,04	18,08
Item 9	-8,83	-7,49	-0,84	17,16
Item 10	-14,25	-12,83	4,62	22,47
Item 11	-7,03	-11,21	-3,96	22,20
All items	-11,66	-12,89	5,24	19,31

Table 36. Actual and desired school culture value gaps per type and per item

The culture type means and value gaps are visually presented in Figure 5. Columns stand for the actual school culture, whereas bullets stand for the desired school culture. Positive value gaps are represented by the same color bullet being higher than the column, whereas negative value gaps with same color column being higher. It can be seen that Type A and B bullets (desired culture) are below Type A and B columns (actual culture) respectively and in all items, regardless of the level of the percentage (negative value gap). On the other hand, Type D bullets (desired culture) are above Type D columns (actual culture) respectively and in all items, regardless of the level of the percentage (positive value gap). This is also the case for Type C, with the exception of items 9 and 11, where the column (actual culture) reaches higher than the bullet (desired culture).

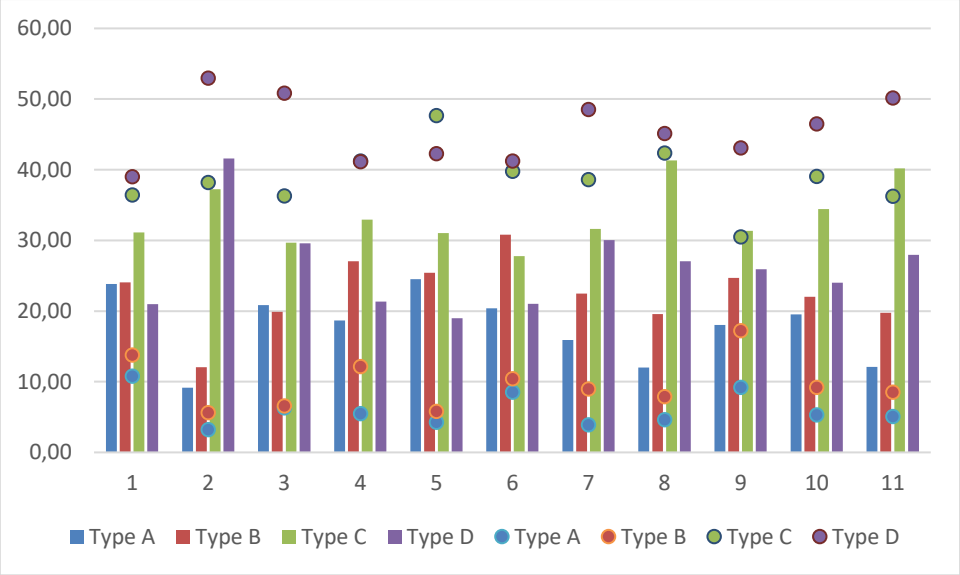

Figure 5. Actual and desired school culture per culture and per item

3.7.3.1.2. Central tendencies and dispersion measures.

The distribution of the survey data per type of actual and desired school culture was analyzed. The results can be seen in Figures 6-13.

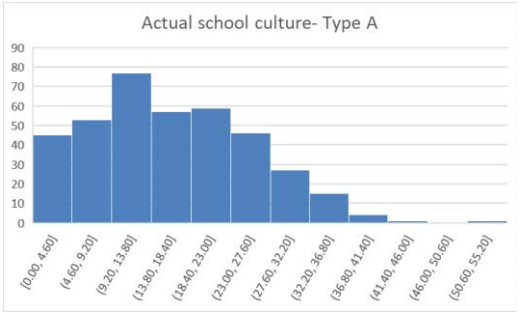

Figure 6. Distribution for Type A of the actual school culture

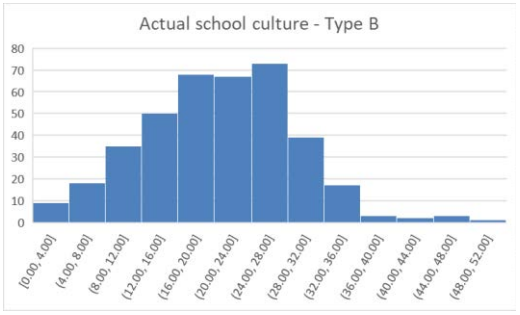

Figure 7. Distribution for Type B of the actual school culture

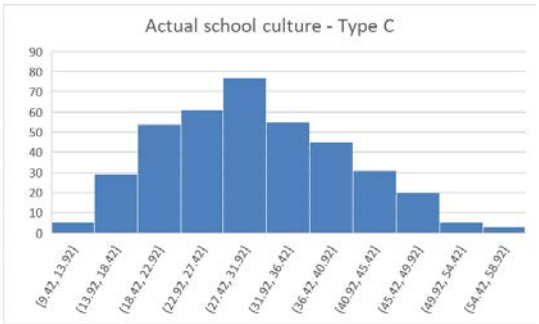

Figure 8. Distribution for Type C of the actual school culture

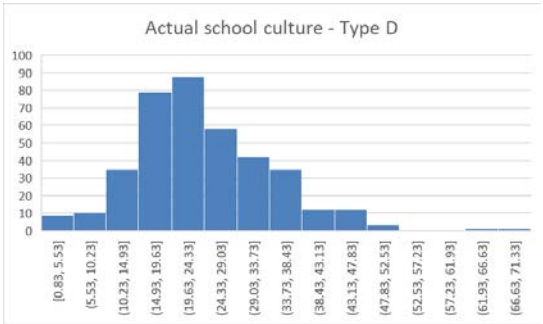

Figure 9. Distribution for Type D of the actual school culture

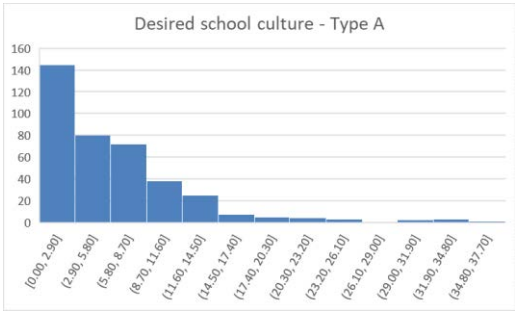

Figure 10. Distribution for Type A of the desired school culture

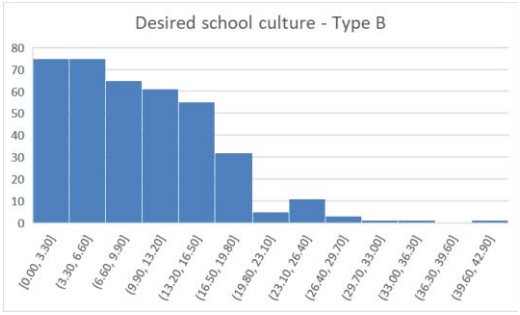

Figure 11. Distribution for Type B of the desired school culture

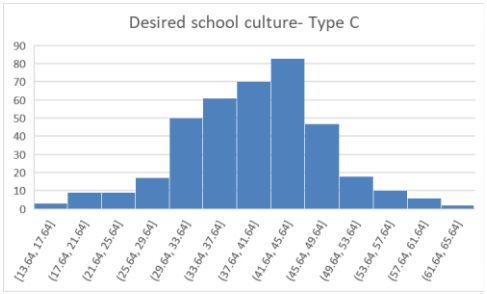

Figure 12. Distribution for Type C of the desired school culture

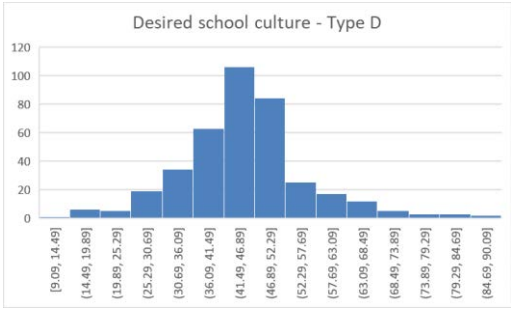

Figure 13. Distribution for Type D of the desired school culture

As it can be seen in Figures 6-13, the distribution of the data is not symmetrical in all actual and desired school culture types. Especially in the case of the actual school culture Type A, the desired school culture Type A and the desired school culture Type B, the distribution of the data is significantly right-skewed. For this reason, it was decided that the median, as well as the standard deviation of the data, should be calculated and taken into account in the analysis of the central tendencies and the dispersion of the data. The mean, median, their difference and the standard deviation are presented in Table 37 for the actual school culture and Table 38 for the desired school culture.

Actual school culture																
Type A				Type B				Type C				Type D				
Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	
17.72	15.00	2.72	9.50	22.53	21.25	1.28	8.33	33.52	30.00	3.52	9.32	26.22	22.50	3.72	9.79	

Table 37. Means, medians, mean-median differences and standard deviations of the actual school culture per type

As it can be seen, there are wider differences between the mean and the median in the change positive types of the actual school culture in comparison to the change negative school culture types. The widest mean- median difference combined with the highest

standard deviation is found in Type D (Mean-Mdn: 3.72, SD: 9.79). This, potentially, manifests a weaker consensus in the teachers´ evaluation of the change creative characteristics of the actual school culture. As it can be seen in the corresponding data distribution (Figure 9), this is probably a result of the existence of outliers.

Desired school culture																
Type A				Type B				Type C				Type D				
Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	
6.06	4.55	1.51	6.06	9.65	9.09	0.56	6.89	38.76	40.45	-1.69	8.37	45.53	44.55	0.99	11.14	

Table 38. Means, medians, mean-median differences and standard deviations of the desired school culture per type

With regards to the desired school culture, it can be seen that the mean-median differences of the change rejective culture type remain relatively high (M-Mdn: 1.51), especially if we take into consideration that the mean and median themselves are represented by low percentages in the specific culture type (Mean: 6.06, Median: 4.55). This may be a result of the existence of outliers, as it can be seen in Figure 10.

Comparing the actual with the desired school culture, it, also, becomes evident that the mean-median differences and standard deviation in all types, with the exception of standard deviation in Type D, are lower in the desired school culture in comparison with the actual school culture. Consequently, there seems to be more consensus in the evaluation of the desired school culture than in the evaluation of the actual school culture.

3.7.3.1.3. Results by item.

According to the survey, teachers in primary education units in the region of Crete believe that the actual school culture is mostly characterized by features of a change friendly culture in 9 out of the 11 investigated areas. The only exception is item 2 (management), where the change creative culture type has the highest mean percentage (M: 41.57) and item 6 (academic emphasis; personal, social and civic skills), where the change resistant school culture type is dominant (M:30.82). The change negative culture types in combination are most dominant in item 5 (families) (Type A+Type B M: 49.96) and item 1 (school culture) (Type A+Type B M: 47.89).

	Actual school culture															
	Type A				Type B				Type C				Type D			
	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD
1	23.81	20	3.81	16.21	24.08	20	4.08	13.44	31.14	30	1.14	15.41	20.97	20	0.97	13.00
2	9.14	5	4.14	12.57	12.03	10	2.03	11.70	37.25	40	-2.75	17.01	41.57	40	1.57	18.93
3	20.86	20	0.86	17.35	19.89	20	-0.11	15.36	29.67	30	-0.33	16.45	29.58	30	-0.42	20.50
4	18.66	20	-1.34	15.24	27.05	25	2.05	15.84	32.94	30	2.94	16.99	21.35	20	1.35	16.10
5	24.53	20	4.53	17.51	25.43	20	5.43	14.49	31.06	30	1.06	18.41	18.98	20	-1.02	14.10
6	20.37	20	0.37	16.52	30.82	30	0.82	18.89	27.77	25	2.77	15.88	21.04	20	1.04	16.20
7	15.88	10	5.88	16.06	22.48	20	2.48	15.57	31.61	30	1.61	15.55	30.03	30	0.03	18.69
8	12.03	10	2.03	14.80	19.59	20	-0.41	18.00	41.31	40	1.31	20.17	27.07	30	-2.93	17.24
9	18.02	10	8.02	18.35	24.70	20	4.70	16.85	31.35	30	1.35	17.35	25.93	20	5.93	17.26
10	19.55	20	-0.45	18.63	22.03	20	2.03	16.51	34.43	30	4.43	19.69	24.00	20	4.00	18.02
11	12.10	10	2.10	15.25	19.74	20	-0.26	17.77	40.21	40	0.21	19.78	27.95	30	-2.05	18.25

Table 39. Actual school culture types means, medians, mean-median differences and standard deviations per item

With regards to the desired school culture, data show a clear preference for Type D culture in 9 of the 11 areas, with the exception of items 4 and 5 (students in our school and the families), where Type C (M: 41.25, M: 47.65) accumulates higher mean percentages than Type D. It has to be noted down that in the case of students, Types C and D have a very small difference (.12). Item 8 (teaching resources), although dominantly evaluated as Type D (M: 45.15), has the second highest percentage for Type C among all items (M: 42.35). In addition, the two change negative types in combination are most dominant in item 1 (school purpose) (Type A+ B M: 24.74) and item 9 (geographical scope) (Type A+ B M: 26.4). All means, medians, mean-median differences and standard deviations can be seen in Tables 39 and 40.

	Desired school culture															
	Type A				Type B				Type C				Type D			
	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD
1	10.76	10	0.76	10.16	13.78	10	3.78	10.55	36.45	30	6.45	17.24	39.01	40	-0.99	19.11
2	3.22	0	3.22	6.52	5.61	0	5.61	8.44	38.19	40	-1.81	17.48	52.97	50	2.97	19.40
3	6.30	0	6.30	10.64	6.57	0	6.57	9.15	36.31	40	-3.69	17.59	50.82	50	0.82	20.60
4	5.49	0	5.49	7.99	12.13	10	2.13	13.06	41.25	40	1.25	16.29	41.13	40	1.13	16.75
5	4.26	0	4.26	10.63	5.81	0	5.81	9.68	47.65	50	-2.35	18.37	42.28	40	2.28	17.85
6	8.53	5	3.53	10.86	10.44	10	0.44	12.17	39.78	40	-0.22	15.90	41.25	40	1.25	17.70
7	3.90	0	3.90	7.62	8.97	10	-1.03	10.53	38.60	40	-1.40	14.35	48.53	50	-1.47	17.47
8	4.63	0	4.63	7.22	7.87	5	2.87	12.51	42.35	50	-7.65	17.09	45.15	40	5.15	18.22
9	9.19	0	9.19	9.22	17.21	10	7.21	13.57	30.51	35	-4.49	17.81	43.09	40	3.09	21.26
10	5.29	0	5.29	8.77	9.19	0	9.19	11.55	39.04	40	-0.96	16.45	46.47	50	-3.53	19.04
11	5.07	0	5.07	7.78	8.53	0	8.53	9.95	36.25	40	-3.75	18.35	50.15	50	0.15	20.40

Table 40. Desired school culture types means, medians, mean-median differences and standard deviations per item

Item 1: Purpose of education

The actual school culture is formed by characteristics from all four types with Type C being represented by a slightly higher mean percentage in the data (M: 31.14). Type A

is evaluated with the second highest mean among all items (M: 24.08). The desired school culture is mainly formed by types C and D. However, the percentage for Type A remains the highest among the respective percentages of the 11 items (M: 10.76).

Item 2: Management

The actual school culture is formed mainly by characteristics from culture Types C and D. Types A and B are at their weakest in the area of management, with the lowest means and medians reported among all items, combined with the lowest standard deviations. The same types are even stronger in the case of the desired school culture, representing the highest combined percentage among all items. In this item, Type A is given the lowest percentage in both the actual (M: 9.14) and the desired school culture (M: 3.22), while the value gap in the change positive types combined is at its lowest (VG: 12.34).

Item 3: Teacher collaboration

All four culture types participate in the formation of the actual school culture, with Types C and D given slightly higher percentages. In the desired school culture, Types C and D combined represent the 87% of the attributed features. The percentage of Type D in the desired school culture is the second highest among the respective percentages of all the 11 items (M: 50.82). Mean-median differences and standard deviations do not manifest significantly different levels in comparison with the rest of the items, which would probably point to a weaker consensus or the existence of important outliers. The third widest value gap in the change positive types combined is reported here (VG: 27.88).

Item 4: Students in our school

Positive and negative culture types are almost equally assessed in this item. For teachers, the percentage given to Type D for the actual school culture is the third lowest among all items (M: 21.35). Types C and D, almost, equally share the largest mean percentage of the desired school culture. Mean-median differences and standard deviations do not manifest significantly different levels in comparison with the rest of the items, which would probably point to a weaker consensus or the existence of important outliers. The second widest value gap in the change positive types combined is reported here (VG: 28.09).

Item 5: The families

This is the item with the highest Type A actual culture percentage among all items (M: 24.53). Types A, B and C almost equally share a part in the actual school culture, with a weaker presence of type D (M: 18.98). It has to be noted down, though, that the mean-median difference in Type B for the actual culture is the highest among all items (Mean-Mdn: 5.42), which may point to a weaker consensus. In the case of the desired school culture, Types C is the strongest type (M: 47.65), followed closely by Type D (M: 42.28). The standard deviation of the desired culture Type C is the highest among all items (SD: 18.37), showing a wider range in the evaluation of the specific type. The widest value gaps, among all items, between the actual and desired school culture are found here, in the case of Types A (-20.27) and D (+23.30).

Item 6: Academic emphasis; personal, social and civic skills

This is the only item where Type B, a change negative school culture type, is the dominant type in the actual school culture (M: 30.82). The highest median among all items is, also, reported in the change resistant culture type (Mdn: 30). The standard deviation of the specific type, though, is highest among all items, pointing to a wider range in the corresponding evaluation (SD:18.89). In the case of the desired school culture, Type D is the dominant culture (M: 41.25), followed closely by Type C (M: 39.78).

Item 7: Academic emphasis; creativity

All four types participate in the formation of the actual school culture, with Types C (M: 31.61) and D (M: 30.03) having the largest percentages. Type D is, by far, the dominant desired culture type (M: 48.53) followed by Type C (M: 38.60). Mean-median differences and standard deviations do not manifest significantly different levels in comparison with the rest of the items, which would probably point to a weaker consensus or the existence of important outliers.

Item 8: Teaching resources

Type C is the most dominant actual school culture type, also gathering the highest mean among all items (Mean: 41.31). It is accompanied, however, with the highest standard deviation among all items (SD: 20.17), pointing to a wider range in the respondents' answers. Actual culture type A has the second lowest percentage among items (M:

12.03). With regards to the desired school culture, Type D (M: 45.15) is closely followed by Type C (M: 42.35). However, the mean-median differences in both Types C and D are the highest among all items, potentially pointing to a skewed data distribution (Type C M-Mdn: 7.65, Type D M-Mdn: 5.15).

Item 9: Academic emphasis; geographical scope

All four types are present in the actual school culture with Type C being the dominant one (M: 31.35) and Type A the weakest one (M: 18.02). The mean-median difference in Type A is the highest among all items (M-Mdn: 8.02), while the standard deviation is second highest (SD: 18.35), pointing to a, potentially, weak consensus. Additionally, the mean-median difference in Type D is the highest one among all items (M-Mdn: 5.93).

With regards to the desired school culture, although Type D is the most dominant culture type (M: 43. 09), followed by Type C, the two change negative culture types combined gather the highest percentage compared to the respective percentages of the rest of the items. There is evidence, though, that there may be weaker consensus in the evaluation of the item, in comparison with the other items, since the mean-median difference in Type A is the highest among all items (M- Mdn: 9.19) and the standard deviations in Types B and D are, also, the highest among all items (Type B SD: 13.57, Type D SD: 21.26). The second smallest value gap in the change positive types combined is reported here (VG: 16.32).

Item 10: Innovation

Type C is the most dominant actual school culture type (M: 34.43), while the rest of the types follow with similar percentages. There is evidence of a potentially weaker consensus in the evaluation of the actual school culture, since the standard deviation in Type A is the highest among all items (SD: 18.63), while in Type C the mean-median difference is the widest (M-Mdn: 4.43) combined with the third highest standard deviation (SD: 19.69). Type D is the most dominant type in the desired school culture (M: 46.47).

Item 11: Beliefs regarding change

Type C is the strongest actual school culture type (M: 40.21), represented by the second highest percentage for the particular type among all items. Type D is the most dominant desired culture type (M: 50.15), with the third highest mean for Type D in the desired culture among all items. Mean-median differences and standard deviations do not manifest significantly different levels in comparison with the rest of the items.

The composition of the actual and desired school culture type by item is presented in Figures 14 and 15 below.

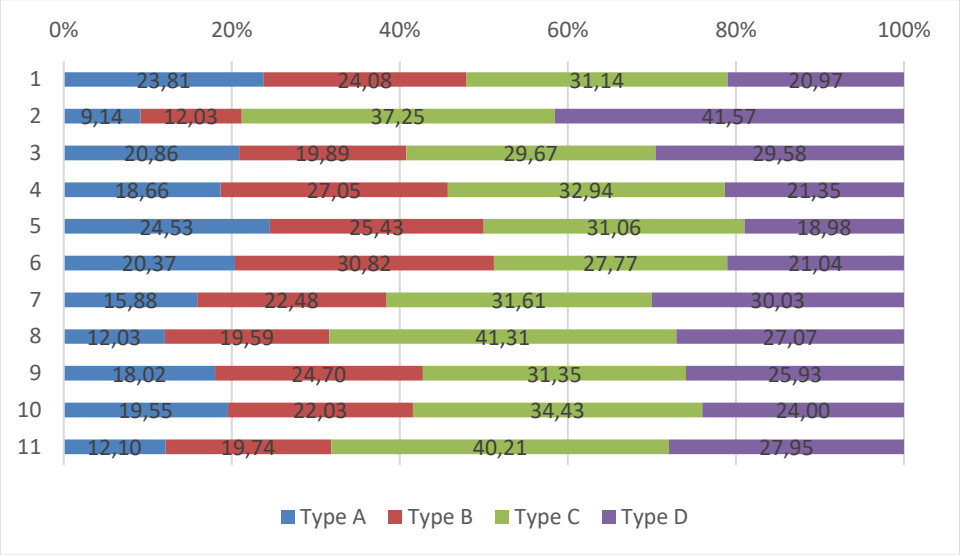

Figure 14. Actual school culture composition per item

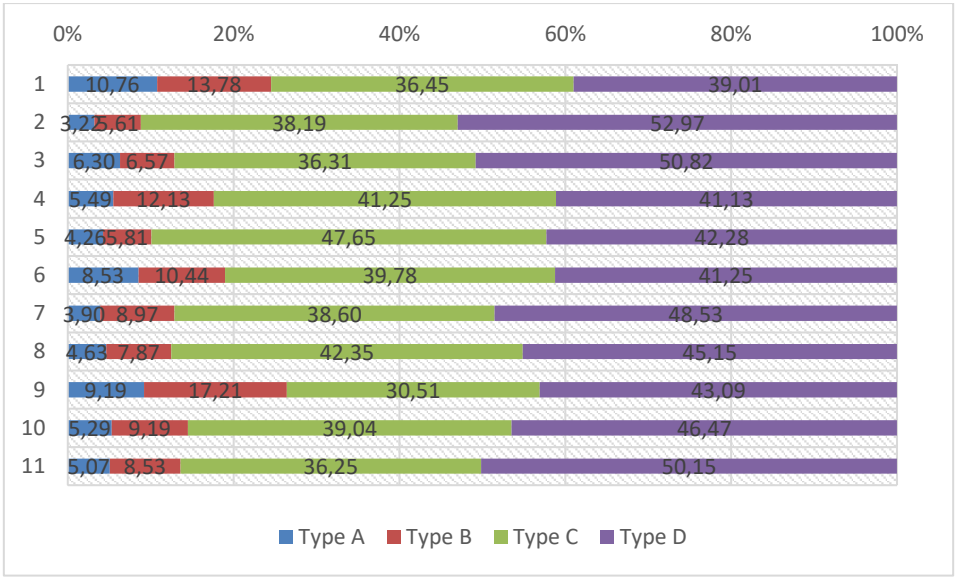

Figure 15. Desired school culture composition per item

3.7.3.1.4. Findings.

The teacher respondents of the questionnaire attribute characteristics from all four culture types to the actual and the desired school culture in primary education in Greece. The change rejective culture type is the weakest in both the actual and the desired school culture. Furthermore, there is a clear tendency towards more change positive characteristics in the desired school culture, which points to the teachers´ preference for a more positive predisposition towards the introduction of change and innovation in primary education.

The actual school culture is mainly evaluated as change positive. The areas with the most change positive characteristics are management and teaching resources. In fact, change management is the only element evaluated as change creative, an area where change is not only welcome but rather inspired and initiated. The areas with the most change negative characteristics are the families, the school purpose, the academic emphasis with regards to the development of the personal, social and civic skills, and the geographical reference.

The school purpose and the geographical scope of reference maintain the most change negative characteristics, among all items, in the desired school culture, as well. In addition, these are the areas with the smallest value gap in the change rejective culture. It becomes evident, consequently, that, although teachers wish for the introduction of more change positive characteristics in these areas, they do not recognize an urgent need for that, in comparison with the rest of the educational elements evaluated. With regards to families, although the value gap is the widest reported among all items, which points to a great need for change in the area, teachers do not seem to wish for families that will have an active role in the initiation of change, but rather for families that will welcome it and accept it.

The areas where change creative characteristics are considered to be most important are management and beliefs about change. Management is, already, evaluated as the most change positive element, with the smallest value gap between the actual and the desired school culture. With regards to beliefs about change, however, there is a greater need for change recognized, due to the reported high importance, which results in the fourth wider value gap.

The distribution of data in the change negative culture types, especially in the case of the desired school culture, is significantly right-skewed. This shows that there is a preference towards fewer change negative characteristics within the change rejective type evaluation, although the mean is affected by the existence of outliers. In other words, although teachers tend to prefer less change negative characteristics, there is a part of the sample that wishes to maintain them in the target school culture. The change creative type in the desired school culture seems to be characterized by the greatest consensus among all culture types, since it manifests a symmetrical distribution of data and a small mean-median difference.

3.7.3.2. Results from the headteachers' responses.

In this chapter, the data gathered from the responses of the 31 headteacher participants in the survey are presented.

According to the analysis of the questionnaire responses, the actual school culture in primary schools in Crete is characterized by a mix of features from all four culture types. The dominant school culture type is Type C. Types D, B and A follow in that specific order. With regards to the desired school culture type, the data analysis shows that the culture type most desired by the respondents is, majorly, characterized by features of culture Type D and, then, Type C. Type B and especially Type A culture characteristics are represented by smaller percentages, as it can be seen in Table 41 and Figures 16-17.

Actual school culture (Mean)				Desired school culture (Mean)			
Type A	Type B	Type C	Type D	Type A	Type B	Type C	Type D
16,61	22,79	33,72	26,88	5,50	10,47	37,80	46,23

Table 41. Mean percentages for the four culture types of the actual and the desired school culture

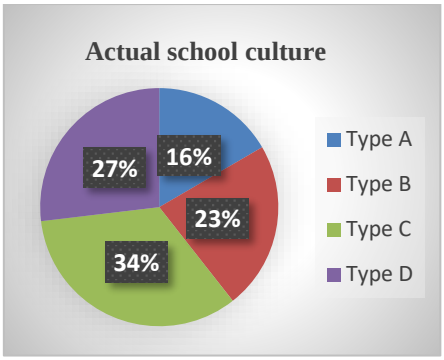

Figure 16. Composition of the actual school culture

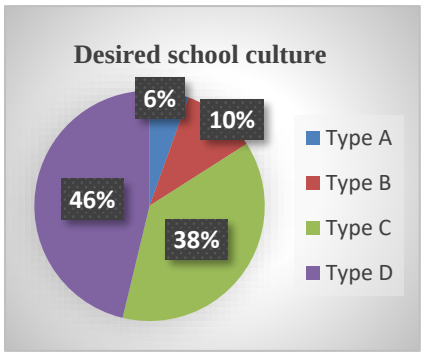

Figure 17. Composition of the desired school culture

3.7.3.2.1. Value gaps between actual and desired school culture.

According to the data, the biggest positive differences between the actual and the desired school culture were in Type D, in all items. The biggest negative differences were in Type A for items 3,4 and 5 and in Type B for items 1,6,7,8, 9, 10 and 11. The widest value gaps are found in Item 3 (+28.55, Type D), Item 5 (+20.97, Type D; -20.32 Type A) and Item 6 (+20.48, Type D). In addition, it must be noted down that in Item 5, there is the widest value gap in the two change negative school culture types (Types A and B) combined (-40.48).

	Type A	Type B	Type C	Type D
Item 1	-9,19	-10,00	2,74	16,45
Item 2	-5,32	-4,52	-6,13	15,97
Item 3	-15,48	-14,19	1,13	28,55
Item 4	-12,90	-12,74	7,26	18,39
Item 5	-20,32	-20,16	19,52	20,97
Item 6	-11,29	-13,06	3,87	20,48
Item 7	-11,61	-12,26	3,71	20,16
Item 8	-6,61	-10,48	1,29	15,81
Item 9	-9,19	-11,45	4,68	15,97
Item 10	-11,61	-14,19	5,65	20,16
Item 11	-8,71	-12,42	1,13	20,00
All items	-11,11	-12,32	4,08	19,35

Table 42. Actual and desired school culture value gaps per type and per item

The culture type means and value gaps are visually presented in Figure 18. Columns stand for the actual school culture, whereas bullets stand for the desired school culture. Positive value gaps are represented by same the color bullet being higher than the column, whereas negative value gaps with the same color column being higher. It can be seen that Type A and B bullets (desired culture) are below Type A and B columns

(actual culture) respectively and in all items, regardless of the level of the percentage (negative value gap). On the other hand, Type D bullets (desired culture) are above Type D columns (actual culture) respectively and in all items, regardless of the level of the percentage (positive value gap). This is, also, the case for Type C, with the exception of item 2, where the column (actual culture) reaches higher than the bullet (desired culture).

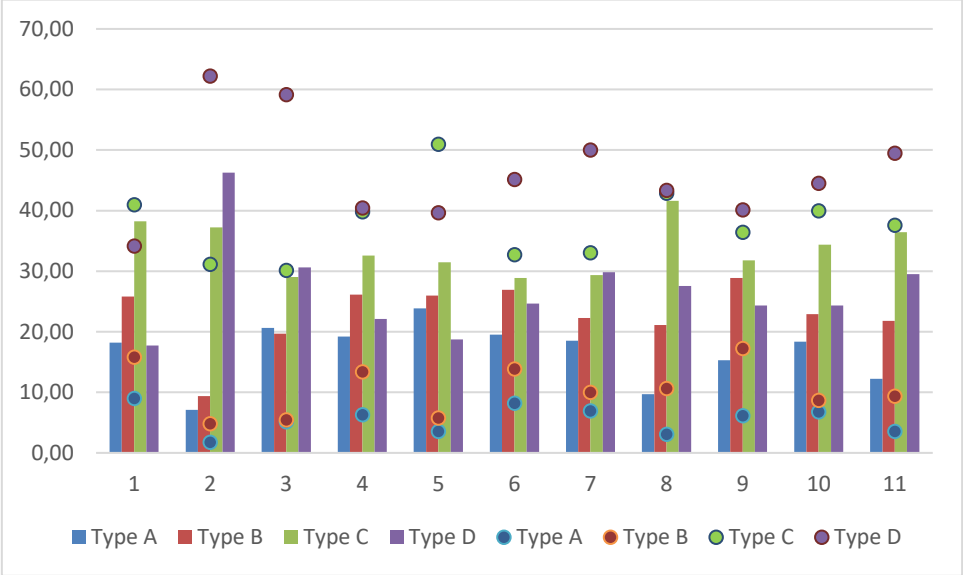

Figure 18. Actual and desired school culture per culture and per item

3.7.3.2.2. Central tendencies and dispersion measures.

The distribution of the survey data per type of the actual and the desired school culture was analyzed for the sample of the headteachers, as well. The results can be seen in Figures 19-26.

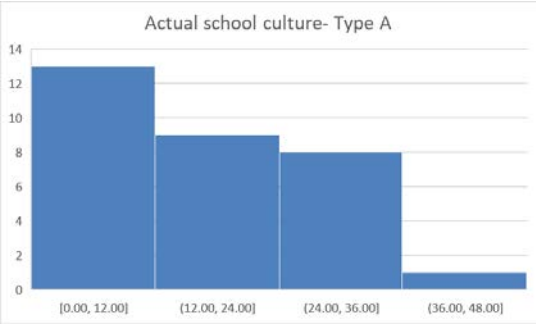

Figure 19. Distribution for Type A of the actual school culture

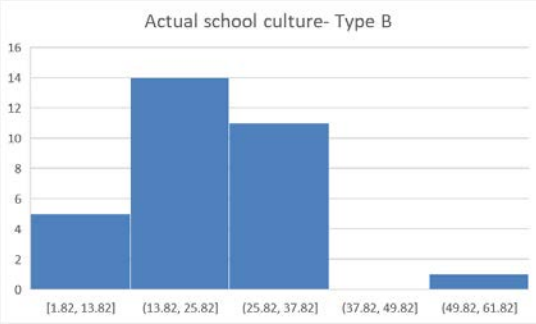

Figure 20. Distribution for Type B of the actual school culture

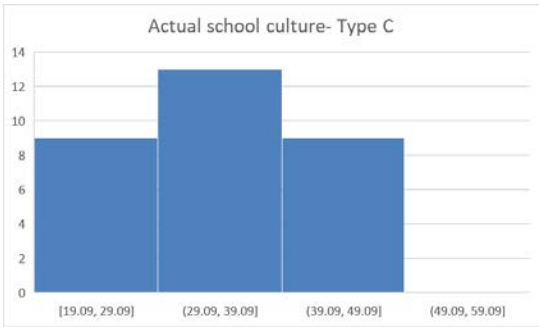

Figure 21. Distribution for Type C of the actual school culture

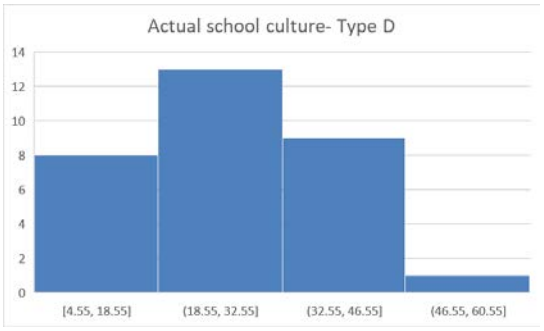

Figure 22. Distribution for Type D of the actual school culture

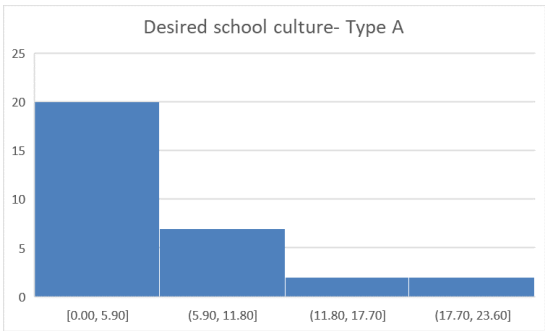

Figure 23. Distribution for Type A of the desired school culture

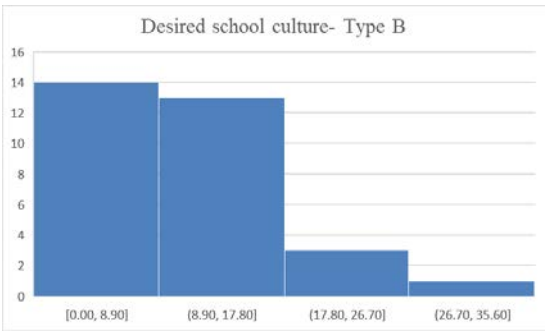

Figure 24. Distribution for Type B of the desired school culture

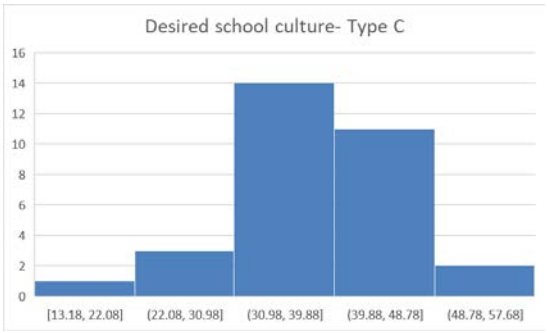

Figure 25. Distribution for Type C of the desired school culture

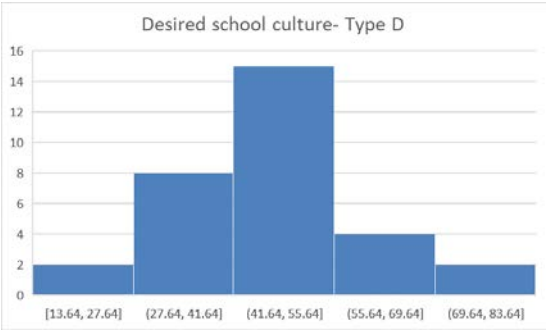

Figure 26. Distribution for Type D of the desired school culture

As it can be seen in Figures 19-26, the distribution of the data is not symmetrical in all actual and desired school culture types. Just as in the sample of the teachers, here as well, the distribution of the data in the case of the actual school culture Type A, the desired school culture Type A and the desired school culture Type B is significantly right-skewed. Consequently, the median and the standard deviation of the data were calculated and taken into account in the analysis of the central tendencies and the dispersion of the headteachers' responses, as well. The mean, median, their difference and the standard deviation are presented in Table 43 for the actual school culture and Table 44 for the desired school culture.

Actual school culture																
Type A				Type B				Type C				Type D				
Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	
16.61	15.00	1.61	10.75	22.80	23.64	-0.84	10.44	33.72	34.55	-0.82	9.11	26.89	24.55	2.35	12.56	

Table 43. Means, medians, mean-median differences and standard deviations of the actual school culture per type

According to Table 43 above, the widest mean- median difference combined with the highest standard deviation, in the case of the actual school culture, is found in Type D (Mean-Mdn: 2.35, SD: 12.56). This, potentially, manifests a weaker consensus in the teachers´ evaluation of the change creative characteristics of the actual school culture. The smallest mean-median difference accompanied by the lowest standard deviation is reported in the evaluation of Type C (Mean-Mdn: -0.82, SD: 9.11). This, in combination with the corresponding histogram in Figure 21, which shows a normal distribution of data, manifests a strong consensus in the evaluation of the particular type, which is, also, the dominant actual culture type.

Desired school culture																
Type A				Type B				Type C				Type D				
Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	
5.50	4.55	0.95	5.33	10.47	9.09	1.38	8.01	37.80	39.09	-1.29	8.00	46.23	47.27	-1.04	12.50	

Table 44. Means, medians, mean-median differences and standard deviations of the desired school culture per type

With regards to the desired school culture (Table 44 above), the mean-median difference and the standard deviation of Type A are the smallest ones among the four types (M-Mdn: .95, SD: 5.33), which shows a stronger consensus in the evaluation of the change rejective type. On the other hand, the mean-median differences of Types B and C are the widest ones (Type B M-Mdn: 1.38, Type C M-Mdn: -1.29). The highest standard deviation is reported in the change creative culture (SD: 12.50), which manifests a wider range in the evaluation of Type D in the desired school culture.

Through the comparison of the actual and the desired school culture, it becomes evident that the standard deviation is lower in the desired school culture in comparison with the actual school culture, in all culture types. This shows a stronger consensus in the characteristics of the desired school culture in comparison to the evaluation of the characteristics of the actual school culture. It has to be noted down, however, that,

although, in general, there seems to be more consensus in the evaluation of the desired school culture than in the evaluation of the actual school culture, the standard deviation of the change creative type in the desired culture remains, almost, as high as in the actual culture.

3.7.3.2.3. Results by item.

According to the survey, headteachers in primary education units in the region of Crete believe that the actual school culture is, mostly, characterized by features of a change friendly culture in 8 out of the 11 investigated areas. In items 2 (management), 3 (teacher collaboration) and 7 (academic emphasis; creativity), the change creative culture type has the highest mean percentages, among the four culture types, and the three highest means for Type D among all items (M: 46.29, M: 30.65, M: 29.84).

With regards to the desired school culture, data show a clear preference for Type D culture in 9 of the 11 areas, with the exception of items 1 and 5 (school purpose and the families), where Type C accumulates higher percentages (M: 40.97, M: 50.97). All means, medians, mean-median differences and standard deviations can be seen in Tables 45 and 46.

	Actual school culture															
	Type A				Type B				Type C				Type D			
	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD
1	18.23	20	-1.77	11.59	25.81	20	5.81	14.15	38.23	30	8.23	18.91	17.74	20	-2.26	10.23
2	7.10	0	7.10	13.15	9.35	10	-0.65	11.60	37.26	40	-2.74	15.27	46.29	40	6.29	18.26
3	20.65	20	0.65	14.19	19.68	20	-0.32	13.72	29.03	30	-0.97	13.57	30.65	30	0.65	20.07
4	19.19	20	-0.81	14.15	26.13	25	1.13	15.15	32.58	30	2.58	16.63	22.10	20	2.10	16.62
5	23.87	20	3.87	20.85	25.97	20	5.97	14.05	31.45	30	1.45	19.03	18.71	20	-1.29	13.60
6	19.52	20	-0.48	17.00	26.94	30	-3.06	15.74	28.87	30	-1.13	14.65	24.68	20	4.68	19.66
7	18.55	20	-1.45	17.57	22.26	20	2.26	16.47	29.35	30	-0.65	14.01	29.84	30	-0.16	17.44
8	9.68	5	4.68	13.03	21.13	20	1.13	17.92	41.61	40	1.61	17.19	27.58	30	-2.42	16.53
9	15.32	10	5.32	15.81	28.87	30	-1.13	21.41	31.77	30	1.77	17.10	24.35	20	4.35	16.18
10	18.39	10	8.39	14.85	22.90	20	2.90	17.07	34.35	30	4.35	16.82	24.35	20	4.35	18.47
11	12.26	10	2.26	15.80	21.77	20	1.77	16.86	36.45	40	-3.55	17.28	29.52	30	-0.48	18.81
All	16.61	15	1.61	10.75	22.80	23.636	-0.84	10.44	33.72	34.55	-0.82	9.11	26.89	24.55	2.35	12.56

Table 45. Actual school culture types means, medians, mean-median differences and standard deviations per item

	Desired school culture															
	Type A				Type B				Type C				Type D			
	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD	Mean	Median	M-Mdn	SD
1	9.03	10	-0.97	7.12	15.81	10	5.81	13.67	40.97	40	0.97	17.58	34.19	30	4.19	18.03
2	1.77	0	1.77	5.25	4.84	0	4.84	7.36	31.13	30	1.13	17.02	62.26	60	2.26	19.78
3	5.16	0	5.16	7.24	5.48	5	0.48	6.75	30.16	30	0.16	14.58	59.19	55	4.19	18.40
4	6.29	10	-3.71	5.91	13.39	10	3.39	12.87	39.84	40	-0.16	13.45	40.48	40	0.48	13.19
5	3.55	0	3.55	6.98	5.81	0	5.81	7.76	50.97	50	0.97	18.82	39.68	50	-10.32	16.48
6	8.23	10	-1.77	10.77	13.87	10	3.87	17.35	32.74	40	-7.26	16.12	45.16	40	5.16	20.27
7	6.94	5	1.94	8.63	10.00	10	0.00	9.49	33.06	40	-6.94	12.76	50.00	50	0.00	20.12
8	3.06	0	3.06	8.03	10.65	0	10.65	14.48	42.90	50	-7.10	18.06	43.39	40	3.39	18.05
9	6.13	0	6.13	9.28	17.26	10	7.26	17.88	36.45	35	1.45	14.39	40.16	40	0.16	17.10
10	6.77	0	6.77	8.52	8.71	5	3.71	10.56	40.00	40	0.00	13.96	44.52	40	4.52	18.18
11	3.55	0	3.55	6.48	9.35	5	4.35	15.59	37.58	40	-2.42	14.60	49.52	50	-0.48	19.93

Table 46. Desired school culture types means, medians, mean-median differences and standard deviations per item

Item 1: Purpose of education

With regards to the actual school culture, Type C is represented by the highest mean percentage among the four types (M: 38.23), followed by Type B (M: 25.81). It has to be noted down that the mean-median difference in the case of Type C is the highest among all items (M-Mdn: 8.23), which might pose a question regarding how representative the mean is, at least compared to the rest of the items. The standard deviation is the second highest among all items (SD: 18.91). Consequently, there is evidence that the evaluation of the change positive characteristics of the actual school culture with regards to the school purpose is not as homogeneous as that of the rest of the items. Type D has its lowest percentage here among all items (M: 17.74). The desired school culture is mainly formed by types C and D. However, the mean percentage for Type A remains the highest among the respective percentages (M: 9.03) of the 11 items and the percentage for Type B the second highest among all the items (M: 15.81).

Item 2: Management

The actual school culture is formed mainly by characteristics from culture types D (M: 46.29) and C (M: 37.26). In the case of the desired school culture, Type D is the dominant culture type and has the highest percentage among all items (M: 62.26). Type A, on the other hand has its lowest percentage here, in comparison with the rest of the items (M: 1.77). Although the standard deviations of the change positive cultures are wider in the desired school culture compared to the actual school culture, pointing to a wider range in the responses of the headteachers, the mean-median differences are lower. Consequently, the mean calculated is, still, considered representative of the data. Although, the value gap for Type D is the lowest among all items (VG: 15.97),

management is the only area where value gaps are negative in all culture types, apart from Type D (Type A VG:-5.32, Type B VG:-4.52, Type C VG:-6.13).

Item 3: Teacher collaboration

Types D (M: 30.65) and C (M: 29.03) are the dominant actual culture types but Type A has its second highest percentage here among all items (M: 20.65). Standard deviation in Type D is the highest among all items (SD: 20.07) pointing to a wider range in the evaluation of the particular type. In the desired school culture, Type D is the dominant culture with its percentage being the second highest among the respective percentages of all 11 items (M: 59.19). Teacher collaboration is the area with the widest value gap in Type D (VG: 28.55).

Item 4: Students in our school

Types C (M: 32.58) and B (M: 26.13) share the majority of the features attributed to the actual school culture. Types D (M: 40.48) and C (M: 39.84), almost, equally share the largest percentage of the desired school culture. Low mean-median differences and standard deviations in the change positive types of the desired school culture show a stronger consensus in the evaluation of the specific area in comparison to others (Type C M-Mdn: -0.16, Type D M-Mdn: 0.48, Type C: SD: 13.45, Type D SD: 13.19).

Item 5: The families

This is the item with the highest Type A actual culture mean percentage among all items (M: 23.87). Furthermore, actual culture type D has the second lowest percentage here (M: 18.71). Type C is the dominant culture in the actual school culture (M: 31.45). In the case of the desired school culture, Type C is the strongest type (M: 50.97), actually, manifesting the highest Type C mean among all items, while Type D has the second lowest percentage among all items (M: 39.68). It has to be noted down that the mean-median difference in the change creative type in the desired school culture is by far the widest among all items (M-Mdn: -10.32), pointing to the existence of extreme outliers that affect the mean calculation. With regards to value gaps, this is the item with the widest value gap between the change negative and the change positive types combined (VG: 40.49). It is important to highlight the value gap in Type C (VG: 19.52), as this is the only item with such a high value gap in Type C, one that almost equals the Type D value gap (VG: 20.97).

Item 6: Academic emphasis; personal, social and civic skills

Type C is the dominant type in the actual school culture (M: 28.87), followed closely by Type B (M: 26.94) and, then, Type D (M: 24.68). Standard deviation in Type D is the second highest among all items (SD: 19.66), pointing to a wider range in the responses of the headteachers with regards to the change creative characteristics of the actual school culture. In the case of the desired school culture, Type D is the dominant culture (M: 45.16). The standard deviation is found at its highest among all items in the change rejective type (SD: 10.77) and the change creative type (SD: 20.27), and at its second highest in the change resistant type (SD: 17.35), showing evidence of a weaker consensus in the evaluation of the desired culture in the specific area, in comparison to the others.

Item 7: Academic emphasis; creativity

Types D (M: 29.84) and C (M: 29.35) share the majority of the features attributed to the actual school culture, representing almost equal percentages. Type D is the dominant desired culture type (M: 50) followed by Type C (M: 33.06). In fact, the evaluation of the change creative type in the desired culture is the third highest among all items. Mean-median differences and standard deviations do not manifest significantly different levels in comparison with the rest of the items, that would probably point to a weaker consensus or the existence of important outliers.

Item 8: Teaching resources

Type C is the most dominant actual school culture type, also gathering the highest percentage among all items (M: 41.61). The actual culture Type A has the second lowest percentage among items (M: 9.68). In the case of the desired school culture, Types D (M: 43.39) and C (M: 43.39) are the most dominant, sharing almost equal mean percentages, while Type A has its second lowest percentage among all items here (M: 3.06). The value gap in the change positive culture types combined is the second lowest among all items (VG: 17.1). Mean-median differences and standard deviations do not manifest significantly different levels in comparison with the rest of the items, which would probably point to a weaker consensus or the existence of important outliers.

Item 9: Academic emphasis; geographical scope

Type C is the dominant actual culture type (M: 31.77), followed by Type B (24.35). The standard deviation of Type B is the highest among all items (SD: 21.41). Although Type D is the most dominant desired culture type (M: 40.16), its mean percentage is the third lowest among all items. Type C is the second most dominant type in the desired school culture (M: 36.45), while Type B has its highest percentage here among all items (M: 17.26). The high mean-median differences and standard deviations of the change negative types in the desired culture (Type A M-Mdn: 6.13, Type B M-Mdn: 7.26, Type A SD: 9.28, Type B SD: 17.88) manifest a, potentially, weaker consensus with regards to the preferred culture approach to the geographical scope of primary education, in comparison to the rest of the items. The smallest value gap in Type D is reported in this item (and item 8 equally) (VG: 15.81).

Item 10: Innovation

Type C is the most dominant actual school culture type (M: 34.35), followed by Type D (M: 24.35). The mean-median difference in the change rejective type is the highest among all items (M-Mdn: 8.39). Type D is the most dominant in the desired school culture (M: 44.52), followed by Type C (M: 40.00). Mean-median differences and standard deviations do not manifest significantly different levels in comparison with the rest of the items, which would probably point to a weaker consensus or the existence of important outliers.

Item 11: Beliefs regarding change

Type C is the strongest actual school culture type (M: 36.45) and, actually, represented by the third highest mean percentage for the change positive type among all items. It is followed by Type D (M: 29.52). Type D is the most dominant desired culture type (M: 49.52), followed by Type C (M: 37.58). Mean-median differences and standard deviations do not manifest significantly different levels in comparison with the rest of the items.

The composition of the actual and the desired school culture types by item is shown in Figures 27 and 28 below.

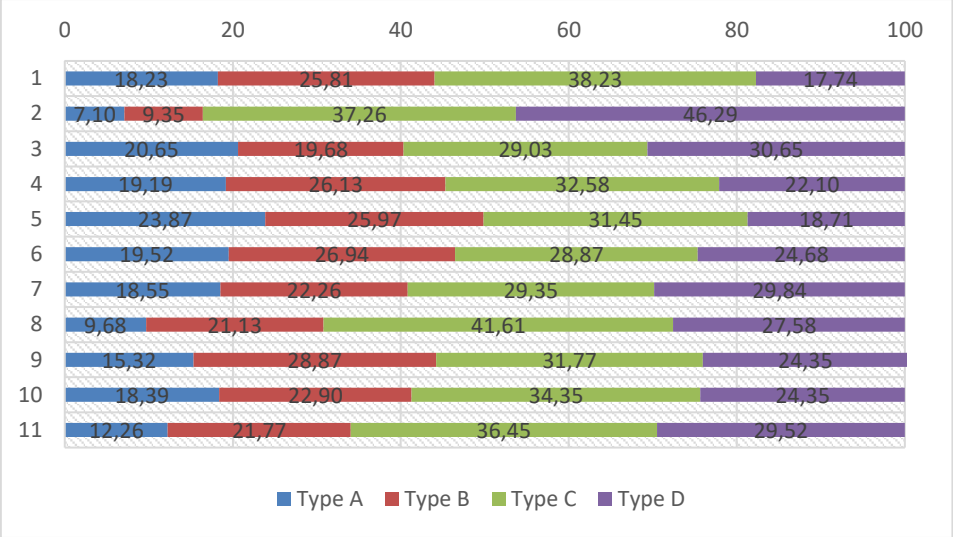

Figure 27. Actual school culture composition per item

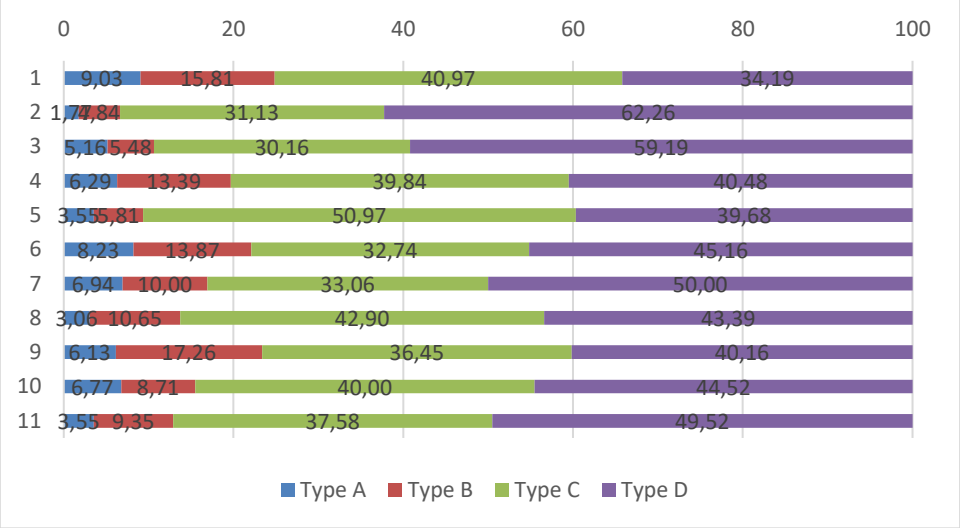

Figure 28. Desired school culture composition per item

3.7.3.2.4. Findings.

The headteacher respondents of the questionnaire attribute characteristics from all four culture types to the actual and the desired school culture in primary education in Greece. The change rejective culture type is the weakest in both the actual and the desired school culture and there is a clear tendency towards more change positive characteristics in the desired school culture.

The actual school culture is mainly evaluated as change positive. The areas with the most change positive characteristics are management, teacher collaboration and creativity as academic emphasis. All three elements are evaluated as change creative.

The areas with the most change negative characteristics are the families and the students, the personal, social and civic skills as academic emphasis and the school purpose. The school purpose is, also, evaluated as the least change creative aspect of culture.

The school purpose maintains the most change negative characteristics among all items in the desired school culture, as well. The smallest value gaps between the change negative and the change positive types are reported in management, teaching resources and the school purpose. It becomes evident, consequently, that, although headteachers manifest a predisposition towards more change positive characteristics in these areas, they do not recognize an urgent need for the introduction for such characteristics, in comparison with the rest of the educational elements evaluated. With regards to families, although the value gap is the widest reported among all items, which points to a great need for change in the area, headteachers do not seem to wish for families that will initiate or suggest change but rather for families that will welcome it and accept it.

The areas where change creative characteristics are considered to be most important are management and teacher collaboration. Management is, already, evaluated as the most change positive element, also, with the smallest value gap between the actual and the desired school culture, a common finding in the teachers' responses, too. However, with regards to teacher collaboration, there is a greater need for change recognized, due to the reported high importance, which results in the second wider value gap.

The distribution of data in the change negative culture types, especially in the case of the desired school culture, is significantly right-skewed. This shows that there is preference towards fewer change negative characteristics within the change rejective type evaluation, although the mean is affected by the existence of outliers. In other words, although headteachers tend to prefer less change negative characteristics, there is a part of the sample that wishes to maintain them in the desired school culture. A big mean-median difference in the change creative type in the families element, also, shows the existence of a part of the sample that believes that families should not be significantly characterised by change creative traits.

3.7.3.3. Combination of Teachers' and Headteachers' Findings.

Both the teachers and headteachers respondents of the questionnaire attribute characteristics from all four culture types to the actual and the desired school culture in primary education. There is an agreement between the two groups that the change rejective culture type is the weakest one in both the actual and the desired school culture. In addition, both teachers and headteachers agree that there is need for more change positive characteristics in the school culture.

Studying the two groups´ responses per item manifests that, in the majority of the cases, the teachers and the headteachers agree on their evaluation of the actual and the desired school culture. To start with, both groups believe that management is the area most positively predisposed to change. Other such areas for the headteachers include the collaboration among the teachers and creativity as academic emphasis, while for teachers the use of teaching resources. On the other hand, the areas evaluated as the most change negative by both teachers and headteachers are related to the families' role, the school purpose and the emphasis placed on the development of the personal, social and civic skills. Teachers add the geographical scope of reference as one of the most change negative aspects of the actual school culture, while headteachers point to the identity of the students.

With regards to the desired culture, both groups assess management as the most change positive aspect of culture. Teachers, also, point to the heightened importance of the change positive characteristics of the beliefs held with regards to change, while headteachers highlight the aspects of the teacher collaboration and the families. The areas where change negative characteristics are most maintained include the school purpose and the geographical scope of reference for all the respondents. Headteachers, also, assess students and the development of personal, social and civic skills high in change negative characteristics in comparison to the rest of the culture aspects.

There is an agreement between teachers and headteachers that the predisposition of families towards change is the aspect most in need of improvement. It has to be mentioned here, however, that both respondent groups desire families that will welcome and support change (Type C- change friendly) rather than families that will actively encourage and participate in the initiation and implementation of change and innovation

(Type D- change creative). Teachers, also, hold that there is a great need for change towards more change positive characteristics in the aspect of the development of the personal, social and civic skills. One of the widest value gaps resulting from the headteachers answers is found in the aspect of teacher collaboration. It is interesting to see that the particular aspect has, already, been evaluated as one of the most change positive aspects, which points to the high significance that headteachers attribute to the collaboration among teachers.

Both teachers and headteachers agree that management is the area least in need for change. This could be expected, in a sense, since both groups assessed the specific aspect of the actual school culture as the most change positive. Teachers, also, point to the geographical scope of reference of the education as one of the areas with the smallest value gaps, while headteachers to the teaching resources and the school purpose. It has to be highlighted that the geographical scope and the school purpose were assessed by the teachers and the headteachers respectively as two of the areas with the most change negative characteristics in the actual school culture. These two observations in combination show that, although the respondents recognize various existing change negative characteristics in the particular aspects, they do not believe that it is a priority that these characteristics should be eliminated.

The combined findings from the teachers and headteachers responses to the quantitative questionnaire are presented in Table 47.

	Teachers	**Headteachers**
Most change positive areas in the actual culture	Management Teaching resources	Management Teacher collaboration Creativity
Most change negative areas in the actual culture	Families School purpose Personal, social and civic skills Geographical scope	Families Students Personal, social and civic skills School purpose

Most change positive areas in the desired culture	Management Beliefs about change	Management Teacher collaboration Families
Most change negative areas in the desired culture	School purpose Geographical scope	School purpose Students Personal, social and civic skills Geographical scope
Areas with the biggest value gaps	Families Personal, social and civic skills	Families Teacher collaboration
Areas with the smallest value gaps	Management Geographical scope	Management Teaching resources School purpose

Table 47. Combined teachers and headteachers findings

3.8. Follow-up Qualitative Research

3.8.1. Observation.

3.8.1.1. Methodology and tool.

Observation in the field serves the goal of developing an insight of the values, relationships, interests, language, practices and activities of a culture (Brennen, 2012). Within the context of the current research, observation of inside and outside classroom processes provides access to verbal and non-verbal, conscious and unconscious expressions of aspects of the school culture that are related to introduction of change in teaching practice. It, further, contributes to the enrichment and triangulation of the conceptualization of culture aspects which may be unclearly, incompletely, inaccurately or subjectively evaluated by the respondents in the previous research stages.

According to Brennen (2012), the observer can be involved in the observed environment at four differentiated levels, namely as a complete observer, observer as participant, participant as observer and complete participant. The involvement level adopted in the current research was that of the observer as participant, in which the researcher is on site, in contrast to the complete observer, but distances herself from those being observed, discusses and interviews members of the school community but does not actively participate in activities, as the participant as observer and the complete participant would do.

The observation data collection and analysis were approached with a sense of "reflexivity" which, according to Denzin and Lincoln (1998, p. 395) "is associated with self-critique and personal quest, playing on the subjective, the experiential, and the idea of empathy". Comprehending the people observed entails a certain level of difficulty, especially when the researcher's personal values and experiences are different to the ones observed. For this reason, the results of the data analysis of the observation procedure are continually juxtaposed with the results of the data analysis of the other research methods used and are always approached on the basis of the recognition that there may be alternative interpretations.

The procedure of the data recognition, collection and analysis evolved based on the research design decisions taken, in order for the corresponding research objectives to be better served. According to Anguera et al. (2001, in Villaseñor, Losada López & Anguera Arguilaga, 2003), the main criteria for the determination of observational designs are three, namely: the record temporality, the observed items and the response level. In the context of the current research the observation method used follows a punctual, idiographic, multidimensional design. Punctual recording was used, instead of follow-up, as the research wishes to approach the aspects under study at a given moment in time rather than over a period. In addition, the observed subjects were considered as members of a wider group and studied correspondingly (idiographic), rather than being approached as individuals (nomotetic). Finally, taking into consideration the multi-aspect character of the variable of school culture, which has, repeatedly, been discussed throughout this research, the observational design aimed at the investigation of a variety of dimensions rather than a single one.

The dimensions to be observed were predetermined and described in the Observation Code (see Appendix, Item 4). An observation code specific to each of the observed elements (classes, teachers and headteacher meetings, and school buildings) was developed based on the objectives of this stage of the research and the findings from the core quantitative research stage. The decision to use ad hoc instruments was dictated by the concurrence of multiple conducts and the unforeseeable response in the human behavior, which is related with the process of observation (Villaseñor et al., 2003).

The classroom is where the essence of teaching and learning takes place. Consequently, the dimensions included in the observation code for the context of the classroom are, mainly, related to the particular concepts and processes. Emphasis was given on the observation of practices manifesting where academic emphasis is placed, according to research objectives 4, 5 and 6, and the corresponding use of teaching resources. The particular choice was, further, dictated by the quantitative findings that showed increased change negative characteristics in the area of the personal, social and civic skills development, despite the importance given to them in the relevant literature.

In addition, the observation of the classroom was seen as a chance for the researcher to directly access manifestations of the identity of the students, in combination with the role of the teacher and the interaction between the two. Although the student predisposition to the introduction of change in teaching and learning had, already, been investigated in the previous research stage through the teachers' and headteachers' perspective, it was deemed important that the researcher directly observed the students' behaviour in the classroom. The combination of the two perspectives serves the objective of the enrichment and triangulation of the findings with regards to the student's role in the formation of the cultural predisposition to change.

Consequently, the core dimensions observed in the classroom were teaching practices aiming at 21st century skills, especially personal, social and civic skills in the globalized world, the students' reaction to such practices, use of teaching resources and the teacher's role. The dimensions are analyzed in detail in the Observation Code found in the Appendix (Item 4).

Taking into consideration that meetings are the core occasion where there is an interaction between the teachers and the headteacher, as well as among the teachers themselves, when opinions are discussed and decisions are taken, the observation of meetings was seen as a chance for the researcher to focus on the dimensions of management, teacher collaboration and beliefs about change. Management had, already, been evaluated as the most change positive aspect of the actual and the desired school culture, according to the survey results. Teacher collaboration had, also, been given special emphasis by headteachers, who had evaluated it as one of the most change positive aspects in the actual school culture, further recognizing a need for ever more change positive characteristics in the desired school culture. Beliefs about change are regarded as a core dimension that affects the development of the rest of the cultural dimensions. In addition, according to the teachers´ responses to the survey, it is an area in need of more change positive characteristics.

The most important elements observed in meetings were information communication, participation in discussion, decision-making procedures, predisposition to introduced change on the part of the teachers and the headteacher, and teacher to teacher interaction and collaboration, especially with the aim of planning of projects and activities. The

dimensions are analyzed in detail in the Observation Code found in the Appendix (Item 4).

The observation of the school buildings, mainly, served the dimension of the academic areas emphasized. Examples of results of practices and projects aiming at the development of skills exhibited in the schools were searched for and recorded. The dimension of the resources used in the educational procedure was, also, investigated through the type of tools available, as well as through the level of their availability. Elements of teacher collaboration in the projects were, also, recorded where possible. The analysis of the elements observed can be seen in detail in the Observation Code found in the Appendix (Item 4).

Observations were documented through detailed field notes for further analysis. Observation sheets were designed for each procedure. The observation sheets, which included all the aspects of culture to be assessed, included a table of evaluation of each element based on the Model of Culture Types discussed in Chapter 3.5, which was, also, used as a point of reference in the survey data analysis. Furthermore, they included space for notes related to each of the elements observed. The observations sheets can be found in the Appendix (Item 5).

3.8.1.2. Sample.

The sample included 7 public primary schools, namely the 1st Primary School of Heraklio (S1), the 2nd Primary School of Voutes (S2), the 34th Primary School of Heraklio (S3), the Primary School of Aghia Varvara (S4), the Primary School of Kalessa (S5), the 1st Primary School of Perama (S6) and 14th Primary School of Rethymno (S7). Sixteen classes were observed in the visited schools. The 16 classes correspond to the 7 schools, as it is presented in Table 48. The schools visited are referred to as S1-S7 and the classes observed are referred to as C1-C16.

S1	**S2**	**S3**	**S4**	**S5**	**S6**	**S7**
C1, C2	C3, C4	C5, C6, C7, C8	C9, C10	C11, C12	C13, C14	C15, C16

Table 48. Classes visited for observation per school

The researcher had the opportunity to observe two school meetings (in S1 and S2). In the rest of the schools, there were no formal meetings scheduled in the period of the

visits. Additionally, the researcher was given access to the minutes of the latest meeting in S7. The buildings of all seven schools included in the sample were observed.

The schools visited were purposively selected, in order for the sample to include both rural and urban schools from different sizes. The characteristics of the schools are presented in Table 49.

	School size				School area	
	1-4	**5-10**	**11-15**	**>16**	**Urban**	**Rural**
S1		x			x	
S2				x		x
S3			x		x	
S4			x			x
S5	x					x
S6			x			x
S7			x		x	

Table 49. Characteristics of the schools visited for observation

The school culture types of the schools in the sample, as they are evaluated by teachers are shown in Table 50.

	Actual School Culture Type				Desired School Culture			
	A	**B**	**C**	**D**	**A**	**B**	**C**	**D**
S1	15,00	19,09	41,14	24,77	2,88	4,47	42,05	50,61
S2	19,52	20,36	34,46	25,65	6,88	10,97	39,52	42,64
S3	23,24	26,82	29,16	20,78	9,41	16,29	36,01	38,29
S4	18,41	21,55	34,18	25,86	5,09	8,41	42,27	44,23
S5	8,03	17,42	45,00	29,55	5,15	6,21	43,18	45,45
S6	17,01	23,70	34,29	25,00	10,19	15,13	39,55	35,13
S7	16,09	19,39	36,41	28,11	8,71	11,70	37,26	42,33

Table 50. Actual and desired school culture of the schools visited for observation, according to teachers

The school culture types of the schools in the sample, as they are evaluated by headteachers are shown in Table 51.

	Actual School Culture Type				Desired School Culture			
	A	**B**	**C**	**D**	**A**	**B**	**C**	**D**
S1	9,09	17,73	49,09	24,09	0	0,91	39,54	59,55
S2	16,82	19,55	34,54	29,09	3,64	5,91	40,45	50
S3	10,45	17,73	31,82	40,00	9,09	16,36	31,82	42,73
S4	15,45	24,55	30,00	30,00	4,55	11,82	38,18	45,45
S5	10,91	15,45	39,09	34,55	0	6,36	39,09	54,55
S6	18,18	35,45	32,73	13,64	18,18	35,45	32,73	13,64
S7	19,09	32,73	23,64	24,54	11,36	21,37	32,27	35

Table 51. Actual and desired school culture of the schools visited for observation, according to headteachers

The classes observed were taught by both general teachers and specialties of both sexes and of various work experience lengths. In addition, the observation data was derived from classes of a variety of subjects and sizes. The details of the observed classes can be seen in Table 52.

	Teacher specialty		**Teacher sex**		**Teacher work experience**		
	General	Specialty	Man	Woman	1-10	11-20	>20
N	12	4	2	14	5	5	6
	Subject					**Class size**	
	Language	Mathematics	English	Phys. Ed.	Music	1-15	16-20	21-25
N	6	5	3	1	1	8	4	4

Table 52. Characteristics of the classes visited for observation.

3.8.1.3. Results.

Observation of classes.

Personal skills.

Personal skills were the ones mostly addressed in the observed classes, in comparison to other types of skills. Following rules and instructions was the skill addressed in all of the classes observed (n=16), while in five of the classes, this was the only personal skill emphasized by the teacher. The development of patience was, also, emphasized (n=5). Students were commonly asked to wait for their turn to ask a question. Goal setting techniques and planning for achievement was discussed in three of the classes. In C3, the teacher, after a long relevant discussion, wrote the question "what do you need to achieve your goals?" on the board and allowed the students time for a brainstorming of answers. The ability to work without the teacher's supervision was practiced through autonomous work time in three classes. Critical thinking was addressed through questions and discussion. In C3, the whole teaching session was devoted to a conversation in which one student replied to the other with regards to issues such as the importance of knowledge, how we reach knowledge and the importance of exams. In this conversation, the teacher performed more of practical role, making sure that all students participate. Building argumentation and supporting one's personal opinion was emphasized.

The personal skills emphasized in the classes observed are presented in Table 53.

Personal skills	N	Classes
Following rules and instructions	16	All
Patience	5	4, 9, 10, 14, 16
Positivity, happiness	3	4, 5, 16
Goal setting and planning for achievement of goals, persistence	3	3, 5, 15
Working independently	3	9, 11,16
Critical thinking	2	3, 12
Taking care of personal health and hygiene	2	4, 14
Responsibility of actions	1	3
Supporting personal opinion, self-confidence	1	3

Table 53. Class observation results: Personal skills

Social skills.

In five of the classes there was no evidence of social skills development observed. In the fact, in the majority of the classes there were no elements of team work practices observed (n=11). In these cases, the only type of interaction observed was between the teacher and the students, while there was no structured student to student interaction.

Conversation skills, such as listening to the person talking without interrupting, were emphasized in two classes through discussion and were included in the class rules of the majority of the classes observed (n=11). Values, such as respect and kindness were, also, discussed and mainly approached in the form of advice (n=5). Such values and relevant social skills were linked to the development and management of healthy personal relationships, with special reference made to family relationships (C4). Aesop's fairytales were used to approach the issue of accepting difference and to make references to bullying (C4). Emotion management skills were addressed through discussion, as well as practice, when a student expressed his hesitance to hug his mother. The teacher discussed the issue and offered to play the role of the mother for the student to practise the hug (C5). The students were motivated to ask for help if they needed it (C16), to offer help to their classmates (C4) and to cooperate with their team towards common objectives (C14, C15).

The social skills emphasized in the classes observed are presented in Table 54.

Social skills	N	Classes
Conversation skills (listen to the others, wait for you turn to talk)	11	1, 3, 4, 5, 8, 9, 10, 13, 14, 15, 16
Respect	4	1, 3, 4, 14
Ask and offer help	3	4, 13, 16
Cooperate (wait for the team)	2	14, 15
Kindness	2	1, 9
Apologize	1	3
Family relationships	1	4
Accepting difference	1	4
Express feelings	1	5

Table 54. Class observation results: Social skills

Civic skills.

This is the type of skills least addressed in the classes observed. In 12 of the classes there were no elements of civic skills development. In two classes, the students were asked to choose a representative of the team through voting. Discussion of the importance of all professions and of the respect that people have to show towards them took place in C3. The concept of rights and obligations was, also, discussed in C5.

The civic skills observed in these 4 classes are the ones presented in Table 55.

Civic skills	N	Classes
Vote for representative- elections	2	4, 16
Respect all professions	1	3
Rights and obligations	1	5

Table 55. Class observation results: Civic skills

Creativity and divergent thinking.

In seven of the classes observed, there were no elements of practices for the development of the particular skills. In fact, in some of the classes, there were elements of clear emphasis on rigid structures and specific predetermined results (C2, C7, C13). Deviation from either the procedure or the result was negatively perceived and judged in these cases.

In nine of the classes observed, creativity and divergent thinking development was addressed through a variety of practices. For example, students were motivated to give alternative answers to questions and to think of different, not so obvious, linguistic meanings of words or texts (“what else can this word mean?”, C5). They were, also, asked to clarify their stories through enriching their expression physically and

theatrically, which, in some cases, developed in structured role play activities (the birds and the foxes from a myth, C4). Experimentation in order to solve challenges and reach knowledge in an explorative way that was, also, observed in two classes. In a music class, the teacher introduced new challenges in the teaching practice without previous presentation of the new information, letting the students risk trying different answers (C8). Elements of creative activities were recorded through projects results exhibition in the classrooms. For example, in C4, cereal boxes were upcycled to be used as students' document filers, while in C3 there was an exhibition of stories created by students.

The practices used for the development of creativity and divergent thinking are presented in Table 56.

Creativity and divergent thinking skills	**N**	**Classes**
Alternative answers/ meanings	3	5, 9, 16
Opportunities for theatrical/ physical expression	3	5, 10, 13
Role play activities	2	4, 15
Challenges for experimentation and explorative learning	2	8, 16
Alternative use of objects	1	4
Story telling	1	3

Table 56. Class observation results: Creativity and divergent thinking

References to the global context.

In the majority of the classes observed, there were no references to the global environment (n=12). In three classes, there were project results exhibited in the form of posters on the wall which referred to the aborigines of the world (C3), world cities (C5) and national flags (C16). In C6, there were references made to the weather in other cities in Europe.

Details about the references made to the global context can be found in Table 57.

References to the global context	**N**	**Classes**
Posters	3	3, 5, 16
Discussion of weather in other cities	1	6

Table 57. Class observation results: References to the global context

Student participation and flexibility.

Students in the observed classes showed high levels of participation and flexibility when given the opportunity. In all 16 classes, the students readily responded to the teacher´s questions and asked things they did not understand. In all of the classes where there was introduction of alternative or more flexible tasks, the students adapted with little or no problems (n=11). It has to be mentioned that in five of the classes (C2, C6, C7, C11, C13) there were only rigid traditional practices and a strict use of the book, so there is no evidence of the students´ flexibility and adaptability.

Students manifested their wish to participate in the evolution of the lesson by making suggestions (n=10). They suggested, for example, "writing more calculations on the board" (C1), "introducing themselves" (C4) or "doing the exercise alone" (C14). They, also, added information from their personal experience or additional knowledge they had with regards to the discussed topic. A student in C12 mentioned a pertinent piece of news referring to Portugal that he had heard on the television. When asked open questions with many possible answers, students gave a variety of different replies, even when the teacher only aimed at one predetermined answer. In C6, the students kept trying various responses until they, eventually, found the one response expected by the teacher.

Important elements of critical thinking and argumentation by the students were observed in only two classes, in which the teachers encouraged their students' deeper levels of thinking. Furthermore, there were scarce elements of students' offering advice to their classmates (n=2) and volunteering to take up additional information search homework tasks (n=1). The only case where students negatively judged deviation from the procedures was in a traditional, teacher-centered class with a very rigid teaching structure. In that case the teacher only accepted predetermined answers and did not allow any deviation herself and the students followed her example in an effort to satisfy the set criteria (C2).

Details about student participation and flexibility in the classes observed can be found in Table 58.

Student participation and flexibility	N	Classes
Students ask things they do not understand	16	All
Students reply to teacher´s questions	16	All
Students respond to a variety of tasks	11	1, 3, 4, 5, 8, 9, 10, 12, 14, 15, 16
Students make suggestions	10	1, 3, 4, 5, 9, 10, 13, 14, 15, 16
Students add information	7	1, 3, 4, 8, 9, 12, 13
Students give a variety of answers	5	6, 7, 9, 11, 13
Students show elements of critical thinking	2	3, 4
Students give each other advice	2	10, 16
Students volunteer to take up tasks	1	5
Students judge deviation from the procedures	1	2

Table 58. Class observation results: Student participation and flexibility

Teaching resources.

The classes observed were primarily or completely based on the use of traditional teaching resources, with the exception of C4, C8 and C16. The teacher in C8, used realia (candles) as the main teaching tool to teach music rhythms. The used realia in C2, C5 and C7 (an identity card, flowers and chocolate) were, only, used as examples of things mentioned in the book, in a lesson otherwise dominated by traditional tools. In C4 and C16, the lesson design and development were based, almost exclusively, on the use of ICT, while in C9 and C13, the available computer and projector were used for the projection of the book.

The teaching resources used in the classes observed can be seen in Table 59.

Teaching resources	N	Classes
Board	12	1, 2, 3, 6, 7, 9, 10, 11, 12, 13, 14, 16
Books	9	2, 4, 5, 6, 7, 9, 11, 12, 13
Handouts	4	6, 7, 10, 14
Realia	4	2, 5, 7, 8
Internet, computer and projector	3	4, 9, 13
Internet and interaction board	1	16

Table 59. Class observation results: Teaching resources

ICT intergration.

In the majority of the classes observed there was no ICT used in the teaching practices (n=11). In two classes, the use of the ICT was restricted to the projection of the book, while in C4, ICT was fully integrated in the lesson. Apart from the projection of the e-

book, the available equipment was, also, used for information search, access to blogs created by other schools and the projection of videos. In C16, the available interactive board was the only teaching tool used, which allowed students to practise mathematical skills through online educational games.

The reasons for ICT use in the five classes where relevant practices were observed, are presented in Table 60.

Level of ICT integration	**N**	**Classes**
Projection of book	2	9, 13
Audiovisual material	1	4
Phone call	1	5
Requirement for homework	1	5
Online games	1	16
After school communication	1	5

Table 60. Class observation results: ICT integration

Teacher role.

With regards, to content knowledge, there was evidence of inquiry-based teaching practices, which moved away from the traditional centrality of the teacher role, in the majority of classes (n=12). In nine of the classes, students were guided towards new content knowledge through questions posed by the teacher. In three classes, teachers equally combined questions to elicit knowledge with presentation of information. In the four remaining classes, new information was merely presented by the teacher, with scarce or no elements of inquiry-based learning.

There were some elements of student empowerment, in classes where students were given responsibility or were allowed to decide how some elements of the lesson would proceed (n=4). The teacher in C8 gave a student the role of the teacher assistant, which included some practical responsibilities, as well as increased participation in decision-making. In C6, the students were allowed to choose the difficulty level of the online game used.

Detail about the teacher role, as it was observed, can be found in Table 61.

Teacher's role elements	N	Classes
Mainly inquiry-based learning	9	3, 4, 5, 8, 9, 10, 14, 15, 16
Presentation of new knowledge by the teacher	4	2, 6, 7, 13
Equal combination of presentation of information and inquiry-based learning	3	1, 11, 12
Student empowerment	4	1, 6, 8, 3

Table 61. Class observation results: Teacher role

Observation of meetings.

In the three meetings from which data was derived, the main issues discussed aimed at the planning of activities, projects and visits for the next semester (S1), celebration of the carnival (S2), World Book Day activities and Erasmus projects (S7). In S1 and S2, the meetings were observed by the researcher, whereas data for S7 were, only, derived from the latest meeting minutes, which, inevitably, limits the depth that can be reached in the particular case.

In S2, particular emphasis in the discussion was placed on the practical issues of the organisation of the activity and the obligations and responsibilities of the teachers ("who will be responsible for the students at the playground?", "what time do we have to be at school?"). There was no discussion of the aims of the activity. The organisation of the teachers in teams with distributed organisational responsibilities was, also, discussed.

In S1, various references were made to the aims of the activities of the semester to be planned. The choice of the activities was linked to the school students' needs and the skills targeted. The headteacher presented information of the play to be attended, which she had already watched, and the group discussed if the topic was appropriate for the students of the school, how they could relate to the concepts approached and how the teachers could prepare the students, in order for them to make the best out of the activity. The preparation of the students for all planned activities was discussed (psychologist visit, earthquake simulation, book author visit, cooperation with the Institution for support to the Romani population).

In both of the observed meetings, the topics that were to be discussed were prewritten on a board in the meeting room, while in S1, relevant documents had been, also, sent to the teachers' emails before the meeting. The headteachers presented the topics at the beginning of the procedure, updated teachers and encouraged suggestions. All teachers participated in the discussion, asking questions, making suggestions and raising new issues. In S1, the teachers updated the meeting participants with regards to issues of their responsibility (the teacher of the integration support class informed teachers of students' progress).

In both cases, teachers referred to past experience in order to improve the planned activities and not repeat the mistakes of the past. In S1, revision of past experience was made formally through the report of the previous earthquake simulation, where problems had been recorded, while in S2 the teacher informally discussed problems that they recollected from the organisation of the carnival celebration of the previous year.

The climate in the observed meetings was casual and friendly. The headteachers was in charge of the organization of the procedure and the communication of information, but the decisions were taken collectively. There was no voting procedure. A decision was considered accepted by all when there was no negative reaction and after discussion of the participants' perspectives. All participants contributed to the discussion, although not necessarily equally.

Only limited data can be derived from the minutes of the meeting in S7. It is worth noting though that, although the discussion topics of the latest meeting in the school included the discussion of activities and Erasmus projects, there was evidence of resistance on the part of, at least, a proportion of the teachers. In particular, with regards to the Erasmus project the minutes mention: "the particular project does not require approval by the all teachers. There is, already, the minimum requirement of two participants. If the project is approved, only the interested teachers will be asked". Similarly, with relation to the organization of activities for the World Book Day, the teachers were reminded to make suggestions, as only one of them had done it within the set deadline.

Observation of school buildings.

In the majority of the school buildings, there were results of the implemented projects exhibited in the common areas (n=6). In only one of the seven schools visited, were there no such results exhibited. The projects results were, mainly, but not exclusively, presented in the form of posters. The topics appearing in these referred to content knowledge areas (history, grammar, mathematics, physics and others), a range of skills (environmental consciousness, interpersonal relationships, acceptance of diversity, emotions and others) and artistic creation (students' creations, tributes to famous artists and others).

In S7, there was evident emphasis in the global environment, with various projects referring to other countries and cultures. In fact, at the entrance of the school, one could see the word "welcome" in many languages. In three schools, there were a lot of motivational messages written in the common areas, such in the stairs and corridors. Messages addressed the development of self-confidence, like "I made it! I can do even better if I try!" (S7) and interpersonal skills, like "in this school, we are all friends" (S1) or "in this school, we cooperate" (S2). Furthermore, in S1, a school museum was organised in a common area, as a result of a relevant project. In S7, there were parts of the common areas that were organised so as to be able to accommodate groups of students for activities outside the classroom. In addition, in all of the schools where implemented project results were exhibited, there was evidence of some, although not widespread, teacher to teacher collaboration. In addition, ICT technology, such as screens, projects, interactive boards and computers was available in all schools. Almost all classes observed were equipped with computers. However, use of the available technology was not evident in the project results.

3.8.1.4. Findings.

The observation data show that there is a range of skills that are addressed in the Greek primary school. Personal skills are the type of skills mostly addressed. Some social skills and the development of creativity are, also, addressed in a number of classes, while civic skills are introduced in a small number of classes, which may be considered expectable due to the young age of the students. The development of skills, as well as knowledge, takes place with reference to the local environment mostly, namely the

community or the national context. There is little evidence of reference to the global environment, which is mostly initiated by students rather than teachers.

The choice of the type of skills emphasized depends on the students' needs or the teacher's interests. For example, the teacher in C4 shows a particular emphasis on the emotional development of the students, which may be related to her postgraduate studies in emotional endurance which were in progress at the time of the observation. The teacher in C3, on the other hand, devotes a lot of time to a discussion of the students' concerns, as her students show high levels of critical thinking and pose important questions. In general, there is evidence of teacher autonomy and decision flexibility with regards to which skills will be addressed.

Although, the researcher did not have the chance to observe the implementation of any project, there is evidence of a variety of planned, ongoing and completed projects in the data from the observation of the school buildings and the school meetings. The topics of the projects include both content knowledge and skills. There is, however, evidence that not all teachers are equally involved in the school projects and activities and that there is a certain level of resistance. Furthermore, the organisation of activities is not necessarily based on specific objectives or linked to the development of skills.

The common requirement posed by all teachers is for students to follow class specific rules. Emphasis in these rules is, above all, on asking permission to talk and stay quiet throughout the class, which is pertinent to a teacher-centred organisation of the teaching practice. Elements of flexibility are recorded, such as the approach to noise management in some classes, where there is a volume meter on the wall (n=3). Depending on the activity, the teacher sets the allowed volume level. It has to be noted down, though, that in none of the classes observed, was there the volume meter used. Secondarily, the class rules make references to values, such as respect and kindness, which are mainly approached through discussion and teacher advice, especially in the case of conflicts between students. It is, generally, observed that in the majority of the cases, the development of all types of skills is approached through discussion. The teacher's role in the discussion ranges from simply making sure that all students participate (student-centred) to merely describing desired behaviours and giving advice (teacher-centred). There was little or no experiential development of skills in the classes

observed. With regards to team working, for example, although the communication and cooperation skills were written on posters or advised orally by the teacher, the students actually engaged in team-working activities only in two of the sixteen classes observed.

Students are, generally, flexible and adapt to a variety of different activities. They tend to form their learning stance according to the style of the teacher. When they are given the opportunity to use their critical thinking, to be more creative and to think in alternative ways, they are ready to do it. In strictly teacher-centered classes, where emphasis is merely on predetermined results and fixed procedures, they withdraw to more rigid structures and may even judge deviation from them, following the teacher's example.

The teaching resources used are mostly derived from traditional teaching practices. There is introduction of alternative tools, but, in most cases, their role in the teaching practice is minimal. The information and communication technology is, mainly, used for practical reasons, such as to keep students focused and to attract their interest. With regards to the development of digital competence, students are, occasionally, encouraged to use the internet for information search at home. Older students may use digital tools to communicate with the teacher after school. Other digital literacy skills, such as critical use of the internet, were not addressed in any of the classes.

With regards to the teacher's role in the development of content knowledge, there are elements of inquiry-based teaching in the majority of the classes. Content knowledge is developed, mostly, through a combination of new information presentation by the teacher and a widespread use of inquiry-based practices, in which students are guided towards the exploration of new knowledge with teacher-initiated questions. Teachers maintain their central role but students are, also, given the opportunity to participate actively to the development of new content knowledge.

3.8.2. Interviews.

3.8.2.1. Methodology and tool.

In the current research, follow-up interviews have three core objectives, from which the respective questions to be investigated stem. Firstly, to assist the enrichment and triangulation of results produced by the previous stages of the preliminary qualitative

and core quantitative research. The questions asked by the researcher are, thus, dictated by the analysis of the results of the previous stages within the previously described sequential research design. Secondly, to produce a list of specific everyday school practices that are associated with change positive cultures, as, according to Onwuegbuzie and Leech (2006), "what" is done and "how" this is done can be thoroughly studied through qualitative research questions. Finally, to gather suggestions for changes from the basis of the educational system, according to the bottom-up change initiation perspective discussed in the theoretical framework.

According to the quantitative findings from the previous research stage, the main stakeholders of the educational practice at the school level, namely the students, the families, the teachers and the headteacher, manifest different levels of positive predisposition to change. In particular, the role of the families was evaluated as the most change negative aspect of the actual school culture, both by teachers and headteachers, whereas the role of management as the most change positive aspect. Taking into consideration the importance of all the aforementioned groups´ role in the formation of the school culture, it was deemed essential that the particular finding was, further, investigated qualitatively by means of interview questions, which, also, allow the respondent to provide an explanation of his or her opinion. The specific objective of the use of the interviews corresponds to the objective 2 of the research.

The investigation of the dimension of the academic emphasis was, also, set as an objective for the interview process. According to the research objectives 4 and 5, the interview guide included questions that asked for the listing of practices aiming at the development of the student's personal, social and civic skills in the globalized context. Respondents were, specifically, motivated to mention relevant practices that they would link to the concept of innovation, especially in cases when previous questions in the interview process failed to elicit adequate information.

The interviews were, also, deemed as the right instrument for the collection of suggestions made by the teachers and the headteachers with regards to necessary change. Although such suggestions were indirectly made through the recognized value gaps in the core quantitative stage, the researcher holds that the environment of the semi-structured interview gives the respondents the chance to freely talk about the

changes they would like to see in the Greek primary education and add dimensions that have not been included in the research objectives. The combination of the findings of the two stages is, thus, held to contribute to a more thorough and complete conceptualization of the desired change, serving research objectives 8 and 9.

According to the predetermined dimensions to be investigated in the current stage, the interview guide used by the researcher included the following questions.

1. Who is more open to change and who resists more? The headteacher, the teachers, the students or the family?
2. Does the Greek primary school put emphasis more on knowledge or skills?
3. In which ways are students' personal skills developed at school?
4. In which ways are students' social skills developed at school?
5. In which ways are students' civic skills developed at school?
6. In which ways are students' creativity and divergent thinking skills developed at school?
7. In which ways is students' digital literacy skills developed at school?
8. How are students prepared to live in the globalized environment?
9. Can you mention examples of innovative practices from your school experience?
10. What could change in primary education, for schools to be able to better prepare students for the 21st century?

The first stage of the data analysis included the process of data pooling, which was expected to offer an insight of the context at a collective level where individual voices are temporarily lost. At this stage, data reduction is considered essential in order for the researcher to focus on the information most pertinent to the research objectives. This reduced collective view of the data, thus, gave generation to particular categories of information which, in their total, capture the essential collective experience (Booth, 2001). The analysis of the aspects of each category leads to the extraction of the results of the follow-up interviews. For the juxtaposition and illustration of the general results, the analysis moved back to individual voices, referring to pertinent quotations and examples worded by the interviewees (Creswell, 2014).

3.8.2.2. Sample.

The interviews sample included 15 interviewees, teachers and headteachers, from the schools selected for observation, who had offered voluntarily to answer the researcher´s questions. The composition of the sample, with regards to the interviewees' role in the school, sex and work experience length in years, can be seen in Table 62. The interviewees are referred to as I1-I15.

	Role in the School			**Sex**		**Work experience**		
	Head-teachers	**General Teachers**	**Specialty Teachers**	**Men**	**Women**	**1-10 years**	**11-20 years**	**20+ years**
N	2	12	1	1	14	7	5	3
Interv. Code	I2, I15	I1, I3, I4, I6-I12, I14, I15	I13	I6	I1-I5, I7- I15	I5-I10, I12	I3, I11, I13-I15	I1, I2, I4

Table 62. Interviewees' characteristics

3.8.2.3. Results.

Question 1. Who is more open to change and who resists more? The headteacher, the teachers, the students or the family?

The majority of the interviewees (n=12) expressed the belief that change is most easily welcome by students, who are ready to "embrace new things", as I2 says. Families, on the other hand, are seen by the majority of the interviewees (n=11) as the group with the highest level of resistance. They are concerned about the students' academic achievement and have to be persuaded that the new practices will not risk students' progress in this area (I2: "families express doubts with regards to the new teaching practices", I12: "they believe traditional methods to be more effective"). According to the interviewees, some of them, also, express insecurity as to whether they, themselves, will be able to respond to the new conditions (I1). The families' reaction depends heavily on the teacher's stance (I6, I7, I15). "If the teacher is positive towards new practices, is determined and can communicate the reasons to the family, the family is likely to follow and support change" (I6). There are cases where families acknowledged that "academic achievement was, also, improved through the development of skills, especially social ones" (I7).

Three interview participants argued that families are open to change, while there is a significant proportion of the teachers that brings obstacles to its introduction and implementation more than families. It has to be mentioned, here, that all these three interviewees were from the same school. They highlighted that:

- "Lately teachers show more resistance, maybe they are tired, or they feel they lack the required knowledge, they fear the unknown" (I14).
- "Teachers resist change because it requires extra work and that they change what they already know" (I13).
- "Some teachers just choose not to participate or cooperate" (I15).

There was disagreement as to whether younger or older teachers manifest higher levels of resistance. I2 argued that "older teachers view the job with more sensitivity and are willing to take up more work if needed", whereas I7 said that: "it is harder for older teachers to change the way they are used to doing things after many years of work experience". It was mentioned that teachers, in general, have difficulty challenging their pre-existing knowledge (I4, I13). It is a process characterised by "feelings of insecurity" (I1) and a "fear of the unknown" (I14). Additionally, changing the way one does things requires extra work which was proposed as a further reason for teachers' resistance (I1, I3, I13). "Extra work required might be a reason for resistance for the teachers and even for the headteacher, even though this may be against his/ her role" (I6).

The results of the first question per group of people and level of resistance are summed up in Table 63. Headteachers are not included in the table, because interviewees said that it is part of the headteachers role to introduce and implement change, so there is not an issue of headteacher resistance.

	Low/no resistance	**Some resistance**	**High resistance**
Teachers	2	9	4
Students	12	3	0
Families	0	4	11

Table 63. Interviews results: Teachers', students and families' resistance to change

The core characteristics attributed to each group of people are presented in Table 64.

Headteachers	• Want to promote new practices • Promoting change is seen as an integral part of their role • Take change introduction as an order from the Ministry so they have to implement it
Teachers	• Some level of resistance, a proportion of teachers prefers to avoid participation in projects and the implementation of new practices • Reasons for resistance: new practices require extra work and changing long held beliefs and preexisting knowledge, feelings of insecurity, lack of knowledge
Students	• Enthusiastic and ready to embrace new things • Accustomed to having many different types of stimulation, so they do need alternative practices • Need teachers as direction and guidance (not as provision of information)
Families	• Emphasis on academic knowledge, do not want to risk students' academic achievement • Need to be persuaded, have doubts • Some are enthusiastic, see new practices as something that broadens students´ horizons • Support new practices implementation if they are well informed

Table 64. Interviews results: Headteachers, teachers', students and families' predisposition to change

Question 2. Does the Greek primary school put emphasis more on knowledge on skills? The majority of the respondents (n=10) expressed the belief that emphasis is mainly on knowledge development and academic achievement. They pointed out that:

- "Emphasis is, mainly, on knowledge of facts and memorization and less on talents and skills or art." (I7)
- "The majority of the time is spent on the development of academic knowledge. Skills are addressed only if the teacher chooses to spend time on them." (I11)
- "Emphasis is on academic development, because the volume to be taught is too much, too much information, too many exercises." (I12)
- "Although there is an effort to balance knowledge and skills, the first one is emphasized more." (I14)

However, it was argued that "the development of a range of skills should be the basic objective, especially in younger ages" (I15) and that "the emotional side of the students' needs to be addressed and developed, too" (I4, I6). It was mentioned that there have

been, lately, some efforts towards the development of skills (I2, I5). Furthermore, there are four participants who argued that there is balanced emphasis on both, and one that said that emphasis is, primarily, on skills (I1: "skills are more important, and we spend more time on their development"). Concern was expressed, though, that skill development is not approached in a systematic way with long-term structures and objectives, but rather through short-term projects that ask students to use a variety of skills, but do not have the development of these skills as their core objective (I7, I8).

Four interviewees argued that where emphasis is put depends on the teacher, who has autonomy in the classroom (I6 and I11: "if the teacher wants", I4 and I15: "it depends on the teacher"). An issue that was highlighted as restricting to the teacher's choices is the existence of an overloaded curriculum that "leaves no time for the development of skills and competencies" (I12). One interviewee, however, claimed that this proclaimed lack of time is probably "an excuse" teachers use for themselves (I8), while two others highlighted that "the curriculum suggests the balanced development of both academic knowledge and skills" (I2, I4).

The responses of the interviewees with regards to where academic emphasis is placed are collectively presented in Table 65.

	Emphasis on knowledge	**Balanced emphasis**	**Emphasis on skills**
N	11	4	1

Table 65. Interviews results: Emphasis on knowledge or skills

Question 3. In which ways are students' personal skills developed at school?

All interviewees argued that personal skills are given emphasis in primary education. The main way they are approached is through discussion with regards to values, as well as desired personality traits (n=12). Everyday school life gives opportunities for such discussion (n=5), which teachers use to discuss a range of personal skills, such as patience (I5) or positivity (I1).

- "Conflicts are used as opportunities for discussion" (I4)
- "When students disagree, we spend time to discuss the reasons and how they feel and deal with their emotions" (I8)

In most classes, such a discussion at the beginning of the year results in the formulation of the class rules, which place emphasis in a variety of personal and interpersonal skills (n=4). Examples of common personal skills emphasized in class rules include concentration to the learning procedure (I10), cleanliness (I15), self-enhancement (I1) and positivity (I3).

- "We emphasize patience, such as waiting for one's turn, which is, also, written in the class rules" (I5)
- "Thinking positively is a mentality we want to emphasize even in class rules" (I1)

The organization of the teaching and learning procedure with the use of a variety of different tasks and activities helps the students develop different personality traits. Autonomous working skills and self-initiation are developed through tasks that allow students to work on their own, without the help of the teacher (n=3). Freer or even voluntary tasks ask for students to develop their own initiative and self-organization skills (I6). Opportunities for students to present their work to their classmates or larger audiences were mentioned as a way to develop confidence when talking in public (I7).

- "Some of the tasks are not obligatory on purpose, as we want to allow students to develop their initiative more than following orders" (I6)
- "In a task, students had to present their work to their school, which, at first, they found hard because they were not used to doing it. Then, they were not afraid anymore and they enjoyed it" (I7).

Interviewees reported examples of projects aiming, specifically, at the development of personal skills. Issues of emotional development are approached in some of the projects, especially in the first grades of the primary school (n=3). I2 mentioned the projects "I care, I feel, I love, I create" and "I get to know myself", both implemented with six-year-old students in the particular school. Emotional development is, in fact, an area that is believed to be in need of further emphasis (I4). "We do projects to help students recognize and manage their feelings, such as their anger or sadness" (I4). Other projects mentioned aim at the students' relationship with their body, taking care of own's health and personal hygiene (n=5).

The methods for the development of personal skills mentioned are presented in Table 66.

• Discussion • Class rules • Variety of tasks and activities • Projects

Table 66. Interviews results: Personal skills development

Question 4. In which ways are students' social skills developed at school?

All interview participants pointed to team work as the main way towards students' development of social skills at school. They claimed that:

- "A lot of tasks require team play." (I1)
- "We go from individual activities to class activities and to school activities, to develop cooperation skills." (I4)
- "We aim at students' socialization through their organization in teams in the class." (I12)
- "Sometimes, the students are organized in teams and each team studies a different topic." (I7)
- "We, often, play games in teams and this helps students socialize more efficiently and practise their cooperation skills" (I13)

Student cooperation in specific tasks takes place, mainly, within the same class (n=10) and, more rarely (n=2), between different classes. Working in teams, though, is not an easy task because "neither students, nor teachers are trained or it" (I9, I11). Sociometric tests used to study the social structure of the class "offer an insight in the dynamics among students and can help the teacher manage student teams and choose which skills to focus on" (I12). Four interviewees mentioned the discussion of arising issues as a practice. According to two of them, conflicts between students are used as an opportunity for discussion of relationship management issues (I4, I8). Psychologists', social workers' and other experts talks at the school contribute to students', families' and teachers' information on a range of social issues (n=4).

The methods for the development of the social skills mentioned are summed up in Table 67.

• Team working activities and projects • Discussion • Expert talks • Class to class collaboration activities

Table 67. Interviews results: Social skills development

Question 5. In which ways are students' civic skills developed at school?

The main practice mentioned was the distribution of roles of responsibility to students (n=6). Students may be in charge of specific procedures at a class or school level.

- "We offer assign roles to the kids in the classroom, such as who will be in charge of the classroom keys, for example." (I1)
- "Especially with older students, giving responsibilities is important. In our class, for example, there is a different student every week that makes sure that the classroom remains clean." (I11)
- "A class, in our school, is responsible for the school garden. I, really, liked this idea because it helps the students develop their sense of responsibility." (I12)

"Students enjoy undertaking roles and handle their tasks responsibly", according to I11. Elections are performed, especially at higher grades, as a simulation of an important social procedure that students will be involved in as adults (n=3). The results of the elections lead, once again, to the distribution of roles and responsibilities.

Audiovisual material, such as documentaries and movies, that refer to issues of importance for the society are used to inform students (n=3). These are, often, part of wider projects and actions. International days devoted to specific issues are used as "opportunities for the organization of relevant projections and other such actions" (I1).

The cooperation of the school with external institutions contributes to the development of a relationship with the community and its members. Students come in contact with sensitive social groups through visits to Centres of Open Protection of the Elderly, institutions helping disabled children and others (n=3). Other visited institutions of importance to the community include the courts or the police headquarters (I3). Visits to places outside the school building are considered "important for the development of civic skills and should be increased" (I4).

Issues of interest to the community are discussed and investigated with the aim of "recognizing the causes of the problems and suggesting solutions" (I9). Students in a school, for example, visited a polluted river in the area and, then, wrote a letter to the mayor suggesting solutions with regards to the issue (I14). At the same time, projects related to significant arising issues are designed. Refugee integration actions that were part of the school designed project "as long as there are wars, there will be refugees" is one such example (I2). Another common issue for discussion in the classroom is the rights and obligations of the students (I5).

An interviewee expressed a concern that "students manifest a lack of these skills" (I5). Additionally, the relationship of the school with the community is regarded as an issue that would need improvement. I6 argued that "the school opens its door, mainly, just to present something specific, mostly on special occasions, such as Christmas or national celebrations, rather than to interact with the community".

The methods for the development of the civic skills mentioned are presented in Table 68.

• Related projects
• Cooperation with institutions in the community, visits
• Discussion of issues of the community
• Distribution of responsibilities
• Student elections
• Projection of documentaries, movies
• Discussion of rights and obligations

Table 68. Interviews results: Civic skills development

Question 6. In which ways are students' creativity and divergent thinking skills developed at school?

A variety of projects that include theatre, music, dance and other artistic and creative procedures were mentioned (n=5).

- "We do various art projects. Last semester, for example, we worked on the reproduction of famous paintings" (I2)
- "We try to combine elements from different areas of art and story-telling. Now, we are preparing some sound stories, with stories created by the students, which are combined with music elements" (I3)

- "Reading literature is a way to bring students closer to art and to different ways of perceiving things, to show them other worlds. So, sometimes, we do reading marathons in the class." (I15)

Although only mentioned by one interviewee, "students may be given the opportunity to participate in the original design of these activities and make their own suggestions" (I12).

Some interviewees said that they, often, challenge their students to think in alternative ways and to find various solutions to problems, which they link to the development of divergent thinking (n=4). I5 mentioned that "experimenting with objects and finding alternative uses for them is a common practice, because it contributes to the development of the students' creativity and divergent thinking skills" (I15). However, it was recognized that "as students proceed to higher grades, they face more difficulties thinking in alternative ways" (I4).

Story telling with the use of hints is used to inspire student imagination (I7, I11), while I4, also, mentioned role play. Visits to places of cultural interest, such as exhibitions or performances was reported as a practice of great importance as "it brings students in contact with art" (I2).

Simply allowing time for free expression was, also, mentioned here (n=3). "These time slots give the students the chance to express according to their personal likings and talents" (I5). I1 said that she allows her students to interpret information in the textbook in their preferred way, painting, reading, role play or other, rather than one, common way for everybody. "When we have a history lesson for example, students can present what they remember from the lesson in the way they like. So, one may draw a picture, another may play the role of a historical character to describe the events, some other may just present the facts".

There is evidence, however, that, "in general, there are very rigid structures and instructions for students to follow, as predetermined results are expected in the majority of the cases" (I5).

The methods for the development of the students´ creativity and divergent thinking skills mentioned are presented in Table 69.

• Art projects (theatre, dance, music, painting and others) • Use of a variety of alternative educational tools • Visits to places of cultural interest • Story-telling and story creation activities • Alternative use of objects • Time for free expression • Challenges offered for students to find solutions • Opportunities for experimentation • Motivation for divergent thinking • Participation in design of activities

Table 69. Interviews results: Creativity and divergent thinking development

Question 7. In which ways are students' digital literacy skills developed at school?

The majority of the respondents argued that the teacher of Computer Science is mainly responsible for the development of the students' digital literacy skills (n=8). Wider and more meaningful ICT integration in the everyday school practice was reported as a necessity (n=5).

- "There is the Computer Science subject that is dealing with issues of digital literacy, so there is a specific specialty." (I15)
- "The teacher that is mainly responsible for the development of the students' digital literacy is the Computer Science teacher. In the class, we basically use the ICT to search for information." (I1)

In the classroom, students come in contact with the information and communication technology in a variety of ways. Information search and access to audiovisual material is a core reason for the use of ICT in the classroom (n=7).

- "We use ICT a lot in the classroom, because it helps the students stay focused, especially students with special learning needs." (I8)
- "We have a computer and a projector in our classroom. We, often, use them to search for information about the issues we discuss." (I11)
- "We project various videos in the class. Students like it and pay more attention." (I12)

Educational platforms and online games are used within the context of the development or practice of knowledge (n=4). I15 says: "We play a lot of online games. There is a

great variety of them available on the internet. Only if a teacher does not want to find a game appropriate for the lesson, will he not find one." One interviewee mentioned the participation in a coding project in which "students were able to learn the basics of coding using a relevant platform" (I14).

A number of classrooms have been, lately, equipped with interactive boards, the use of which has changed the structure of the traditional lesson (n=5). There is evidence, though, that some teachers do not use the available equipment due to lack of relevant training (I8, I9), while others that have had the training do not have access to the required equipment (I9).

The implementation of projects about online dangers was reported (n=4). These projects include video projections, talks by experts and various activities. I1 highlighted that "these projects offer advantages not only for the students but also for the teachers, who are not, always, well informed" (I1). Other teachers mentioned that they discuss with their students about the use of Internet and the related dangers (n=2). An interviewee mentioned that she places a lot of emphasis on the issue of the critical use of the Internet. She said: "we devote time for detailed discussion at the beginning of the year and, then, we repeat the discussion throughout the academic year to remind students that they have to be careful in the digital world, just as they must be in the real world. We, also, discuss how information found online should be approached and used" (I15). There was concern expressed, though, regarding whether "these discussions and expert talks are limited to a theoretical approach or manage to reach more practical levels of implementation" (I6).

Two teachers mentioned the creation of a class blog, which is run with the participation of the students. Communication applications (email, viber) are used for the communication with students and families (n=2). In addition, one teacher mentioned the implementation of a project in collaboration with external institutions. In the particular case, I4 cooperated with the Computer Science teacher to design a robotics project which won a grant by the Latsis Foundation. With this grant, the school was equipped with 3D printers, which were used during the implementation of the designed project.

The methods for the development of the students´ digital literacy skills mentioned are presented in Table 70.

• ICT specialty subject • Online information search • Use of audiovisual material as teaching tools • Actions related to the safe and critical use of the Internet • Relevant projects • Use of applications and online tools for communication with students and parents • Use of educational platforms • Class blogs • Online games • Discussion of safe and critical internet use

Table 70. Interviews results: Digital literacy development

Question 8. How are students prepared to live in the globalized environment?

The majority of the interviewees expressed the belief that the primary school places emphasis on the local environment (n=9). This emphasis might range from almost no references to the global context to some latest efforts to bring students in contact with the globalized world.

- "There is no time to make references to global issues and it is not emphasized in the curriculum. However, the books give opportunities for such references." (I9)
- "Escaping the local community identity is hard. I prefer to put emphasis more on the national environment to counterbalance this." (I11)
- "It is hard to escape the local environment, because this is where the students grow up. Lately, there is, also, a tendency towards nationalism because of tense political relationships with neighbor countries and the rise of terrorism. This increases resistance and puts obstacles to the introduction of references to the global context." (I14)

There is evidence of disagreement regarding where the emphasis should be placed. A teacher argued that "primary education needs to focus on the local perspective, because it addresses students of young ages that are still forming their geographical identity" (I3). On the other, hand, an interviewee said that the local and global environments "are intertwined and cannot be separated" (I15), whereas another interviewee claimed that

the student preparation for the global environment "is the objective but it is, only, partially achieved" (I1).

The main practice mentioned was bringing students in contact with other cultures, mainly through their traditions and customs. The increasing heterogeneity of the student population poses the need for the integration of students of different cultures and, at the same time, creates opportunities for a contact with other cultures. Actions developed towards this objective include days devoted to the presentation of foreign students' culture with teaching of dancing, cooking traditional recipes or parents talks (I1, I12).

Where there are no foreign cultures in the classroom, the Internet is used for access to information about world customs and traditions (n=4). Online information search is, also, used for the students' update with regards to important global issues arising (n=3). Discussion of world news was mentioned as "an important practice that contributes to the development of the identity of the global citizen" (I10).

According to I5, "schools that take part in European projects (Erasmus, etwinning, and others) have more opportunities for communication with other cultures and the development of the consciousness of the global element in the individual identity". In the context of these projects, students "enjoy the opportunity to come in contact with other students from different countries, either through visits or through mail and online communication" (I14). It becomes evident that schools that participate in international projects develop a mentality that is more oriented towards the global context. I14 is a teacher responsible for the European projects in her school. She implemented the project "World Citizen", which was an externally designed project that offered material and guidance for the preparation of students for the global environment. This was the only project reported that specifically aimed at the concept of world citizenship.

I10 expressed the belief that "the primary school contributes to the development of the students as global citizens by addressing issues that are of global interest, such as recycling, or values that are considered significant worldwide, such as respect". Additionally, I10 claimed that "students are naturally prepared to be part of larger groups through their participation in smaller groups".

With regards to the families, I8 mentioned that, “sometimes, families put obstacles to the students’ contact with other cultures and teachers need to be careful as to how they approach sensitive issues, such as religion and politics, because they run the risk to be disliked by families that have rigid opinion on such issues”. I9 added that “students from families that are more open to the global context are more prepared to come in contact with other cultures at school, as well”.

The methods used for the preparation of the students for their integration in the global environment are presented in Table 71.

• Contact with other cultures • Discussion of global issues and values • European projects, contact with other schools

Table 71. Interviews results: Students preparation for the globalized environment

Question 9. Can you mention examples of innovative practices from your school experience?

There is evidence that there are schools where great numbers of projects are implemented. I3 said that in her school, teachers and students were running 27 projects that academic year (2017-2018). Additionally, I14 and I15, both working at the same school, gave examples of such projects:

- The Hour of Code
- The Snapshot (exchange of cultural related photos)
- The STEM superheroes of Energy
- The researchers’ night
- The energy for life and others.

The project: “The schoolbag at school”, which has been designed and suggested by the Ministry of Education was, also, mentioned as an innovative school practice, although its introduction is still faced with doubts. This is a project that suggests that the students leave their schoolbag at school and are not assigned homework for one weekend each month, with the objective of allowing more free time for them to spend with their families. I8 said with regards to the project: “it was implemented once, but there was a lot of resistance due to practical reasons. For example, families, were concerned regarding whether it was safe to leave the schoolbags at school. Personally, I don’t

agree because the project is implemented superficially and not meaningfully, and its objectives are not achieved. What we need, instead, is a revision of the structure of the school practice, in order to achieve the reduction of homework in general, not just one weekend per month". I1, also, expressed considerable doubt with regards to "whether the so-called innovative projects implemented can be, actually, characterised as innovative".

The variety of the different examples of innovative practices and projects given by the interviewees (n=13) are presented in Table 72.

• School museum (I1) • School garden (I12) • CD production, sound stories (I3) • Interactive boards use as educational tools (I5) • Subject specific classrooms (I5) • Participation in festivals (I7) • Cooperation with schools from Greece or abroad (I7, I14, I15) • Cooperation with the University and other institutions (I11, I14, I15) • Portfolio assessment at school level (I12) • ICT integration in the everyday practice (lessons as television programs, class website) (I6)

Table 72. Interviews results: Examples of innovative practices

Question 10. What could change in primary education, for schools to be able to better prepare students for the 21st century?

The two core proposals for an enhanced primary education made by the interviewees refer to a review of the curriculum (n=14) and lifelong teacher training (n=8). According to the interviewees, the current curriculum is overloaded (n=7) and characterised by unrealistically high academic demands (n=4). The curriculum volume should be reduced (n=7) and the curriculum structure should be more flexible (n=8). I3, also, suggested the creation of a formal curriculum for weaker students. I1, however, pointed out that "the present curriculum is not obliging, as long as you take into account its general objectives".

- "The curriculum is overloaded with information that doesn't correspond to the age of the students. Its volume puts a lot of pressure on teachers, who are always stressed because of it. The topics in the curriculum and the books must be changed" (I12).

- "Although there has been some reduction of the curriculum volume lately and some more flexibility with regards to the curriculum, there is need for more. The teachers is, constantly, faced with the dilemma of where to put emphasis given the time restrictions and the curriculum volume" (I15).
- "The requirements of the curriculum don't correspond to the available time" (I8).

With regards to the curriculum approach to academic emphasis, it was argued that academic emphasis should shift from knowledge to skills development (n=6), while the student's emotional development should not be disregarded (n=3).

- "The curriculum should consist of general guidelines, allowing more flexibility and placing more emphasis on skill development, freer expression and more experiential learning" (I2).
- "The curriculum should place emphasis on training students how think and to create" (I14).
- "The curriculum needs to promote the human values and student's happiness more" (I10).

The classroom needs to become more student-centered and less teacher or book centered, with practices of explorative learning and opportunities for free expression (I2, I5). The volume of homework should be reduced (n=4). This is, further, related to a request for restructuring the school hours (n=5). "Longer and more flexible school hours should allow students to complete their tasks at school. Emphasis on memorization and exams is, also, an issue that needs to change" (I11). I6, further, argued that ICT needs to be integrated in the everyday school practice.

For these changes to be supported and implemented successfully, lifelong teacher training was reported as an essential need (n=4).

- "There is a great need for teacher training, as there is almost no professional training organized" (I14).
- "Teachers lifelong professional training is a need. Teachers need motives and feedback. Seminars can help to update teachers with new information, as well as remind old knowledge, but this procedure must not be organized on a basis of competition. There is a specific need for training in teaching practices" (I8).

- "Maybe, the teachers should be trained to specialize in specific subjects in order to be able to teach them better" (I1).

Three interviewees claimed that families need to be better integrated in the school practice, to be informed and, even, included in training. "The school- family relationship needs to be improved, as trust levels between the two are low" (I9). Apart from that, relationships among teachers are, also, considered in need for enhancement. A reported mentality of individualism and competitiveness causes problems and hinders cooperation (n=3). "We need to develop a mentality of more collegiality in the school" (I11).

I7 argued that "in order for the teachers to be able to introduce change, there needs to be a specific law framework that will support their choices and protect them". Additionally, "the communication between the school and the Ministry of Education ought to be improved and the school should be given the opportunity to participate in bottom-up decision-making" (I11).

Other school level needs that were reported are related to the enhancement of equipment (n=3) and the presence of psychologists and social workers in the schools (I4).

The primary education areas more in need of change, as they were mentioned in the interview responses, are summed up in Table 73.

- Curriculum restructure
- School hours restructure
- Constant teacher training
- Family integration, better school-family relationships
- Equipment improvement
- Less emphasis on memorization, exams and homework
- More emphasis on skills
- More student-centered structures and practices
- Greater variety of practices
- More ICT
- Supporting structures (psychologists and social workers in the schools)
- Clearer law framework supporting teachers

• School participation in decision-making, better communication between schools and the Ministry of Education • Development of teacher collegiality • Feedback and motives for the teachers

Table 73. Interviews results: Areas in need of change

3.8.2.4. Findings.

Teachers believe that the development of skills is as important as the development of content knowledge. However, they acknowledge that the main objective of the primary school remains, in practice, to guide students towards academic achievement. As a result, this is one of the areas most in need for change.

The main reasons why school practice does not place emphasis on the development of skills include the existing overloaded curriculum, families' resistance due to prioritization of academic development and teachers' resistance due to a lack of relevant training or unwillingness to undertake more work. The teachers' predisposition to the topic is regarded of particular importance because of high teacher autonomy in the classroom. Additionally, it is argued that family resistance levels are strongly dependent on the relationship, trust and communication between the families and the school. Consequently, intervention in these elements is regarded essential in order for the school to be able to achieve a more balanced approach to the student development.

It is recognised that, lately, there has been an increase in the implementation of projects aimed at the development of skills and competencies in schools. Numerous projects of various types, structures and topics were mentioned in the interviews. Even though a number of them are externally designed or suggested, they are all adapted to the needs of the school and the students. The projects address a wide range of skills, contribute to the development of the relationship of the school with the community and other schools, and offer opportunities for interaction with the international context. There is evidence, though, that not all teachers implement long-term projects with specific aims and objectives relevant to the development of skills. There is concern that the issue is, often, not approached proactively, but rather from a short-term perspective or through spontaneous unplanned practices as a response to arising issues.

3.8.3. Document analysis.

3.8.3.1. Methodology and tool.

The objective of the application of the document analysis method in the current research is to enrich and further explain findings of the core quantitative research and the follow-up observation and interviews, through the lens of contextualization and triangulation. Thus, the questions that the method wishes to answer were dictated by the data analysis of the aforementioned data, within the context of the sequential research design adopted by this research.

The document selected for analysis is the national curriculum. It is recognized that the national curriculum is the most important text of education, as it summarizes and expresses the perspective of the state with regards to the knowledge and the competencies that the Greek students need to acquire at school, the teaching and assessment methods to be used and the specifications of the teaching material. In addition, the curriculum is an element repeatedly mentioned in the interviews as an element that greatly affects educational choices and practice and, most importantly, as one in need of revision and change.

In Greece, the curriculum is designed on the basis of the suggestions of the Pedagogical Institute, an independent authority founded in 1964. The Pedagogical Institute is the oldest educational research and consulting mechanism in Greece. Its objectives include the study of the Greek educational system, the promotion of the educational technology in the teaching practice, the design and implementation of teacher training and assessment, the provision of suggestions to the Ministry of Education and the implementation of the decisions of the Ministry with regards to pedagogy (http://www.pi-schools.gr/pi_history/). The design and development of the educational policy of the Ministry of Education is greatly affected by the work of the Pedagogical Institute.

The national curriculum is communicated to the schools of the country, to the administrative structures of the Ministry of Education and the school counsellors, while it is, also, made public for every individual or institution that may be interested. Educational stakeholders use it as a point of reference for the development of the educational practice. There is no formal assessment of the level of the accomplishment

of the curriculum. However, it is considered important, although not obligatory, that its core objectives are fulfilled, as the aims set for each subject area at each grade of the primary school, especially with regards to the acquired content knowledge, take for granted that the aims set at earlier grades have been achieved.

The suggestions of the Pedagogical Institute and the latest curriculum were published in the Government Gazette Issues 303B/13-03-2003 (pp. 3733- 4068, available at: http://www.pi-schools.gr/download/programs/depps/fek303.pdf) and 304B/13-03-2013 (pp 4069- 4400, available at: http://www.pi-schools.gr/download/programs/depps/fek304.pdf). The new books were, then, written based on the directions set by the Pedagogical Institute.

The coding process for the document analysis was designed using a direct approach to content analysis, namely a structured line of steps in which prior research and theory is used for the identification of concepts as basic coding categories (Potter & Levine-Donnerstein, 1999). In particular, cultural dimensions identified in the results of the core quantitative research and the follow-up qualitative research, as well as the aspects of culture related to change and innovation discussed in the literature review, were used as the basis of the development of the coding categories. The specific stage is held to be of major importance in the development of the follow-up qualitative research, as it is understood that the credibility of the content analysis depends on the coding process.

The analysis of the national curriculum was conducted with the aim of adding information to the investigation of the dimension of the academic emphasis and the related practices (objectives 3, 4 and 5) through the perspective of the official directions given by the state. The central guidelines with regards to the aforementioned aspects are deemed of significance, especially in the context of an educational system that is described as majorly centralized and top-down organized. Specific emphasis is given to the approach of the national curriculum to the development of skills for the globalized environment of the 21st century and the role of the teacher in the learning process, since both elements affect the choice and implementation of teaching and learning practices.

The dimension of the academic emphasis and the related practices was, also, dictated by qualitative findings of the present research. In particular, the interview participants

in previous stages of the research, repeatedly, referred to the national curriculum as an element that guides their choices, mostly highlighting its limiting nature due to the volume of content knowledge included in it. The greatest majority of the interviewees referred to the curriculum as a rigid element that lacks flexibility and leaves no time for the development of skills and for references to the global context. As a result, the analysis of the particular document, with regards to both its content and its flexibility, was deemed essential. Furthermore, the observation data showed that, although, inquiry-based learning was a common practice, there was, also, an increased use of teacher-centered practices. Consequently, the analysis of the approach of the curriculum to the teacher and the student role in the classroom was considered to be significant. It must be noted that the skills mostly searched for in the curriculum are the skills investigated in the current research, and particularly in the quantitative survey of the second stage, namely the personal, social and civic skills.

The document analysis guide was developed based on the aforementioned dimensions and included the following questions:

1. Does the curriculum emphasize the development of academic knowledge or skills? Which skills are mostly emphasized?
2. Does the curriculum put emphasis on the national or the global context?
3. What teaching methods are suggested?
4. How is the teacher and student roles described?
5. How flexible or rigid is the curriculum?

The questions are related to the findings of the other research tools and, especially, the follow-up interviews.

Qualitative content analysis was applied in the process of the document analysis. The discussion of the selected texts was not limited, merely, in the counting of repeated words but, rather, focused on the study of the language and explicit or inferred meaning, with the aim of classifying parts of the text in categories that represent similar and pertinent meanings (Weber, 1990).

3.8.3.2. Results.

It is recognized in the analyzed document that the educational system "must respond to the contemporary dynamics and the challenges of the present era" (p. 3734). The

characteristics attributed to the contemporary social reality include the following elements:

- The contemporary society is seen as a society of information and knowledge.
- The various social, political, economic and cultural conditions of our era are mainly characterized by fluidity.
- There is rapid scientific and technological development.
- There is an increasing tendency towards the globalization of everything.
- Reality is becoming multicultural.
- There is a strongly competitive spirit developing in all areas (p. 3733- 3734).

As a result, it is recognized that the "once unquestioned role of the school as a core social institution in the area of knowledge provision and competence development seems to undergo some weakening" (p. 3733). Such a recognition supports the argument that the school needs to incorporate changes that will make its role strong and essential once again.

Academic emphasis.

The suggestions of the Pedagogical Institute, which are incorporated in the Government Gazette Issues discussed here, place equal emphasis on the development of academic knowledge and skills. The first two core priority areas, which are defined as "the provision of general education and the development of the student's competencies with emphasis on his/ her interests" (p. 3734), combine these two elements.

In particular, the competencies that are listed as the most significant for students to develop are:

- Communication competencies (talking, listening, reading, writing, argumentation, dialogue and others)
- The effective use of numbers and numerical concepts in everyday life
- The ability to use various sources and tools of information and communication with the aim of finding, analyzing, assessing and presenting information, as well as the protection from the "informational pollution"
- Team working skills
- Critical use of information, values and assumptions

- Problem solving through the development of the skills and strategies of planning, control, feedback and intervention
- The ability to make rational choices at an individual and social level
- The ability to use resources
- Creativity
- The use of knowledge and of the appropriate values towards the formulation of a personal opinion in decision taking (p. 3739)

As it can be seen, emphasis is particularly placed on the development of personal skills, such as information management, resource management, applying knowledge, problem solving, critical thinking and decision-making, as well as creativity. The social skills highlighted include communication and team working, while rational decision-making at a social level is, also, mentioned. The ability to form a personal opinion is, further, related to the need for the student to be able to "act as a responsible and active citizen in a constantly changing and demanding social environment" (p. 3736), pointing to the necessity for civic skills, as well.

The school is expected to provide the conditions that "will allow the student to develop his/ her personality with strong self-perception, emotional stability, critical and dialectical competencies and a positive predisposition towards cooperation and initiative; a responsible, democratic and free personality, with social and human values and free from religious or cultural prejudice" (p. 3734). The concept of values that have to be inspired to the student is repeated in the analyzed documents. According to the curriculum guidelines, "the school is required to contribute to the development of personalities with solid ethical values and a strong self-perception" (p. 3734). Particular emphasis is placed on "the awareness with regards to issues of human rights, global peace and human dignity" (p. 3736).

"The comprehensive development of the student´s personality and his/her successful integration in the society, through the acceptance of common values, as well as the development of intellectual, emotional and psychomotor skills and competencies" (p. 3734) is recognized as the aim of education. The intellectual target-skills refer to "the acquisition of the necessary basic knowledge and the development of intellectual

competencies essential for the processing of information data" (p. 3740). The emotional objectives refer to "the development of the student's emotional world, as well as his/ her interest for scientific knowledge" (p. 3740). They are, also, linked to the adoption of values, perspectives and behaviors (e.g. being alert, decisive, interested, etc.)" (p. 3740). Finally, the psychomotor objectives, mainly, refer to skills, such as measuring, conducting experiments, following instructions, using tools and others (p. 3740).

The student is seen as a "whole of emotional and intellectual needs and interests that have to be satisfied" (p.3733). It is recognized that these needs are particular to each individual student and that "equal opportunities for knowledge and development should be offered to all students" (p. 3734) based on their distinct characteristics. His/ her physical, emotional and social development is a target that should guide educational practice. Especially in the case of younger students in primary education who "perceive the world around them mostly through their senses, the objective is the cultivation of basic concepts and principles and the development of positive stances towards lifelong learning, cooperation and responsibility" (p. 3738).

"The main objective is for the student to learn how to learn" (p. 3735). It is specifically highlighted that the accumulation and memorization of new knowledge that is simply presented to the student should be avoided. On the contrary, active and participatory methods of knowledge development are promoted, along with the creation of these conditions "that will provide the individual with the opportunity for lifelong knowledge and skills update" (p. 3735). In the next stage, "the school must also teach the student how to act, in order for him/ her to be able to implement his/her knowledge and skills in his/ her everyday life, and social and professional activities" (p. 3735).

It is recognized in the suggestions of the Pedagogical Institute that the development of such skills is not supported in the current educational system and that there is need for change towards this direction. "In order to start 'spelling' what is related to the development of critical thinking and imagination, of collective effort, of creative and initiative action, what is required is change in the curriculum, the organization of school time, new books and more appropriate educational material, in general" (p. 3741).

Geographical context emphasized.

The contemporary globalization tendencies are repeatedly recognized in the text of the curriculum. In particular, it is argued that "the globalization of the economy and the minimization of distances contribute to the creation of a social environment with a variety of cultural, linguistic, ethnic and socioeconomic characteristics" (p. 3733). In this context, the development of the national identity goes hand in hand with the development of the identity of the European citizen. The objective set in the curriculum is the "development of the consciousness of the European citizen in combination with the maintenance of our national identity and our cultural self-consciousness" (p. 3735).

The strengthening of the cultural and linguistic identity and the maintenance of the cultural heritage in the context of the modern multicultural society is considered important. It is highlighted, however, that "the probability of the imposition of a one-dimensional cultural model and the increase of phenomena of racism and xenophobia must be minimized" (p.3733).

"The development of the national consciousness means that the students and future citizens adopt the value of national independence, recognizing that the this is a right that all peoples have, along with the values of international peace, safety and cooperation. Furthermore, with the development of the religious consciousness the students can approach the religious beliefs and traditions of themselves, as well as of others, with respect and without prejudice, stereotypes or fanaticism" (p. 4367).

Skills related to the communication with the social environment are placed in the global context, with emphasis placed on the use of both the native and foreign languages, and on access to information about the history and culture of the students themselves, as well as others. "The students must learn to live with others and respect everyone's culture and language, while, simultaneously, maintain the national and cultural identity through the national, cultural, language and religious education" (p. 3737).

Teaching methods suggested.

The curriculum suggests a variety of methodological approaches to knowledge and skill development, namely:

- Exploration and discovery

“The aim is to help students think, manage complex concepts, research and reach knowledge on their own, achieving what has already been mentioned as learning to learn”.

- Visits to the environment (natural or social)

Opportunities to leave the school environment and to visit other environments are regarded particularly important as “they contribute to an experiential approach to teaching”.

- Presentation with the use of the appropriate audiovisual material

The use of such material is held to contribute to an enhanced understanding of concepts and procedures, and increased interest on the part of the student.

- Discussion- dialogue between the teacher and the student or in teams

The discussion method is promoted as a core practice for the development of knowledge, skills and values. It is particularly suggested that “the student’s integration and active participation in the discussion is achieved with appropriate questions that should be prepared before the teaching session”.

- Direct way of teaching, narration

“The teacher has the option of intervening directly in the learning process, when he/ she thinks that the indirect teaching methods are not appropriate for the occasion”.

- Team working teaching methods

“The dynamics developed in the student micro-team can perfectly be used as a frame for the collective processing of data, or as a support frame towards the development of the individual learning” (pp. 3742- 3743).

Particular emphasis is placed on the cross-curricular approach to teaching. In fact, complementarily to the Curriculum composed for each subject there is, also, the Uniform Cross-curricular Framework Curriculum. Although, the distinct subjects are maintained in this document, as well, various ways of linking knowledge from different areas are promoted. The introduction of the cross-curricular approach to knowledge is described as “an innovative initiative, which redefines the goals and the methods of teaching and structures the content of the taught subjects on the base of a balanced horizontal and vertical organization of the curriculum” (p. 4367). The suggested Uniform Cross-Curricular Framework Curriculum is expected to contribute to the desired improvement of the quality of education through “the explorative and holistic

teaching methods and the standardization of the composition of new books, which will refer to the corresponding values and will respect the student's efforts" (p. 4367).

The teacher and student role.

It is clearly stated in the curriculum that the traditional teacher-centered and knowledge-centered school practices are not suggested. "On the contrary, the school has to be student-centred, experiential and creative, with both teachers and students actively participating, it has to be a place of learning, happiness and life, not just a place of stereotypical teaching" (p. 3742). The fragmentation and the passive acquisition of knowledge, as well as the memorization of facts are mentioned as elements that have to be avoided.

The directions of the Pedagogical Institute to the publishing houses that would write the new books for the primary school highlighted that the student should be treated as: "a sensible, multiple-level thinking person, a processor of information, an efficient producer/ transmitter, a collaborative team member, an independent learner, a responsible citizen, a culturally knowledgeable learner" (p. 4397).

Curriculum flexibility.

Both the curriculum and the cross-curricular curriculum are treated with a sense of flexibility on the side of the Pedagogical Institute. In the documents analyzed, it is argued that "the cross-curricular framework designed for each subject is characterized by flexibility; so, it is possible for its content to be adapted when necessary. This flexibility does not diminish, but rather increases the need for the definition of criteria of choice of the knowledge elements that the students have to learn in each subject and each year" (p. 3740).

The curriculum content and structure are mainly presented as general guidelines rather than as rigid educational choice that must be followed. "The cross-curricular curriculum is based on the general principles and objectives of education and teaching, which set the general framework and the orientation axes for the definition of the curriculum content and the educational practice" (p. 3736). It is, particularly, mentioned that flexibility is a basic factor defining the selection of the knowledge content and volume to be taught in each subject area. "There has to be flexibility, so that adaptation to rapid

scientific and technological advances, as well as to the students' differentiated abilities is facilitated" (p. 3738).

Educational objectives per subject.

After the introduction and general description of the perspective and structure of the curriculum, there is the detailed curriculum of each subject area, which presents the suggested knowledge areas to be developed, the timeframe and structure, as well as the corresponding methodological approach. The detailed subject curricula start with the aim of each subject which guides all relevant decisions. Then, a detailed list of content and skills to be acquired by the end of time periods of one or two academic years is presented. In some cases, specific numbers of teaching hours are suggested for the accomplishment of the presented objectives. Despite the detailed listing of the objectives, which may be perceived as a factor that limits the teaching practice, studying the aims of the individual subject curricula makes it evident that the development of content knowledge is seen as an element essentially intertwined with the development of skills and competencies. The aims of each subject area are presented in Table 74.

Language	The development of the students' skill to use the written and oral speech with competence and self-confidence, consciously, responsibly, efficiently and creatively, so that they can participate actively in the school and the wider community (p.3745)
Mathematics	The contribution to the fulfilment of the personality of the student and his/ her successful social integration (through the development of ordered thinking, analysis, deduction, generalization, implementation, critical thinking and rational processing, observation skills, attention, concentration, persistence, initiative, creative imagination, free thinking, the sense of harmony, of order and of beauty) (p. 3983).
Art	The introduction to the arts, studying the arts and enjoying them through equal activities of research and creation of pieces of art, as well as through the knowledge and understanding of the phenomenon of art, so that the student develops as a creator and as audience that likes art (p. 3827).
Theatre	The development of the skills and competencies necessary for students to act harmoniously as independent personalities, as well as within the team (p. 3857).
Religion	The development of free and responsible citizens through the knowledge of the Christian Orthodox beliefs, history and tradition, a critical approach to religious assumptions and values and to the role of religion, the development of religious consciousness, the realization of the existence of distinct religious expressions, the management of contemporary problems and dilemmas, the

	development of independent thought and free expression, the evaluation of Christianity as a life enhancing factor (p. 3867).
History	The development of the historic thought (understanding of historical events through the study of their causes and results) and consciousness (understanding of people's behaviors in certain cases and the development of values and perspectives that lead to the adoption of a responsible behavior in the present and the future). The objectives of the historic thought and consciousness are linked, in this way, to the wider educational aim of the preparation of responsible citizens (p. 3915).
Social and civic education	The understanding of the citizen's role, rights and obligations. The development of students' ability to face and handle the difficult social and ethical problems often appearing in their lives, in their near or wider natural and social environment (in combination with other subjects) (p.3962).
Environmental education	The acquisition of knowledge and the development of skills, values and perspectives that allow the student to observe, describe, interpret and predict, to some extent, the function, the links and the interactions within the natural and human environment, in which human activity develops, in a way that he/ she is led to an awareness of the advantages of and the need for the sustainable development of the planet (p. 4039).
Music	The development of the skill of esthetic satisfaction during listening to, playing or composing music, as one of the manifestations of artistic expression and creativity. The general development of creativity and of the student´s personality (p. 4070)
Foreign languages	The development of the student´s linguistic ability, in order for him/ her to able to communicate in different linguistic and cultural contexts. The promotion of the concepts of literacy, multilingualism and multiculturalism as basic axes of cognitive and social competences (p. 4085).
Computer Science	A primary, but coherent, perception of the basic functions of the computer within a perspective of technological literacy and recognition of the Technology of Information and Communication, along with the development of wider critical thinking skills, ethics, social behavior and initiative for action and creation at an individual level, as well as in collaboration with the members of the team (p. 4141).
Science	The acquisition of knowledge relevant to sciences, the development of the student´s personality with the promotion of independent thought, love for working, the ability to rationally handle situations and to communicate and collaborate. The familiarization of the student with the scientific methodology. The development of critical thinking with regards to the scientific and technological advances so that the student, as a future citizen, will be able to assess their positive or negative impact on individual and social health and the management of natural resources and the environment (p. 4170).

Physical education	The corporal development of the student along with their emotional and intellectual development and their smooth integration in the society (p. 4286).

Table 74. National curriculum analysis: Aims of each subject.

3.8.3.3. Findings.

The development of content knowledge is intertwined with the development of skills and competencies in the national curriculum. The main objectives highlighted include the students´ learning skills and the development of their personality as a whole, with emphasis placed on their emotional, intellectual and physical sides equally. The development of personal and shared values is, also, given priority. Based on the recognition of strong globalization tendencies, the curriculum suggests the development of the national identity along with the identity of the European citizen, and on the basis of respect to the national identities of other people.

With regards to teaching methodology, there is an evident promotion of student-centered practices. Traditional teacher-centered methods, such as narration, are suggested only as one of the methods to be used when the rest of options are not considered appropriate. It is highlighted that memorization and passive acquisition of new knowledge on the part of the students should be avoided.

Although, the distinct subject curricula include detailed structures of the knowledge areas to be approached, along with timeframes and relevant methodological suggestions, it is mentioned in the document that these should be treated as general guidelines. The teachers are encouraged to use the curriculum with flexibility and to adapt it to their classroom and school specific characteristics.

4. CONCLUSION

4.1. Introduction

According to the research design, the five instruments included in the three stages of the research were used in order to gather data with regards to three main concept areas defined by the research questions, as is shown in Table 4 below, which was initially presented in the "Research Design" chapter. These concept areas are the cultural predisposition to change, the academic emphasis and corresponding practices, especially with regards to the development of 21st century skills and the value gaps between the actual and the desired school culture. In the particular chapter, the findings of the five research instruments are combined and organized under the three core research questions investigated. In this way, the triangulation of results is achieved offering the researcher the opportunity to study the same concepts through different lenses reaching different types and levels of information, while identifying potential conflicting findings that might need further attention (Tashakkori and Teddle, 2003). Findings from the research primary data are discussed in combination with concepts previously analyzed in the literature review.

Research Tool / **Research Questions**	Preliminary Interview	Survey	Follow-up Interview	Observation	Document analysis
Cultural predisposition to change	x	x	x	x	x
Academic emphasis and practices	x	x	x	x	x
Value gaps between existing and desired school culture		x	x		

Table 4: Research questions and research tools (repeated table)

4.2. Cultural predisposition to change.

In the discussion of the school culture predisposition to the introduction of new educational concepts and practices, reference will be made to the aim of education and the beliefs held by teachers and headteachers with regards to change. The strength and homogeneity of the actual and the desired school culture will be, also, discussed.

4.2.1. The aim of education.

The perceived aim of education is regarded of particular importance as it is what guides choice and decision-making. As expressed by teachers and headteachers, the aim of education in the context of the Greek primary school and its predisposition to change is, mainly, to guide students towards their all-round development as individuals, citizens and future professionals (Survey item 1: The purpose of education). Although the perception of the purpose of education is found to be change positive, it maintains change negative characteristics that are proportionally significant both in the actual and the desired school culture, in the evaluation of both the teachers and the headteachers. This could, potentially, manifest the existence of ideas in the population, or in a proportion of the population of the survey respondents that can result in tendencies of resistance to the introduction of change in education. The particular assumption is, further, supported by cases of purely traditional, teacher-centered processes reported during the observation of classes. Although these cases were not the rule, they clearly represented the existence of the aforementioned tendencies.

According to findings from the interviews, it is believed that education should aim at skill development and content knowledge equally. It is recognized, however, that, in practice, the main objective of primary education is the student's academic achievement. There is a wide perception that the state places increased emphasis on the development of factual knowledge, which is communicated to the school through a curriculum overloaded with information to be taught.

The particular findings from the responses of the participants, in the preliminary and follow-up interviews, with regards to the role of the curriculum, were further investigated and triangulated through the national curriculum analysis. The findings from the document analysis show that the aim of education according to the official national curriculum, is, primarily, to help students develop their learning skills and personality as a whole, along with a range of personal and shared values. Although there is detailed presentation of the knowledge and skills to be developed within the context of each subject, the notion of flexibility in the use of the curriculum is introduced.

The comparison of the findings of the interviews and the document analysis with regards to the aim of education result to an interesting finding. Teachers and headteachers express the opinion that the aim of education goes further than content knowledge development to skills and personality development but feel restrained due to what they perceive as a curriculum that places emphasis on academic achievement. The national curriculum, on the other hand, promotes, in its core educational objectives, a clear focus on the students' personality and skills development, along with knowledge development.

It is believed that the reason behind this seemingly contradictory finding is related to an unclear perception of the level of flexibility in the use of the national curriculum, which is suggested in the text of the curriculum itself. The new national curriculum is a text that includes, indeed, detailed structures of the knowledge areas to be acquired, combined with timeframes and relevant teaching methodology. It is mentioned, however, that these should, only, be treated as general guidelines that teachers can adapt to the special characteristics of their classrooms. This notion of flexibility, though, that is for the first time mentioned so clearly in the national curriculum, is a new thing in the Greek educational system. As it is discussed in detail in the analysis of the characteristics of the Greek education (Chapter 2.4), the main characteristics of the national educational system have, traditionally, included a strong, central organization and governance system, and a top-down decision-making process (OECD, 2016c). This, inevitably, has created a teacher mentality accustomed to following directions rather than taking the responsibility implied by personal choice and a flexible use of the resources (Kavouri, 1998). Additionally, the inefficient communication between the state and the school that is mentioned by some interviewees, as well as the feelings of distrust towards the political intentions and the instability and fragmentation of the governance system mentioned in relevant literature (Panitsides, 2014) can possibly, further, explain the disagreement in the findings. The promotion of a new educational mentality may be the intention of the state, as expressed in the curriculum, but it seems that the message has not reached the school level.

Another dimension of the aim of education studied in the current research refers to whether the globalization reality is taken into account, consequently making the preparation of students for the conditions of the global environment an objective for

education. Quantitative findings from the survey show an approach that goes beyond the national perspective, but not to the extent of including the development of students as global citizens in the core educational objectives. In addition, this is an area where change negative characteristics, that are related to a focus, only or mainly, on the local environment, are proportionately significant in comparison with other culture areas investigated. The qualitative findings of the research support the existence of this emphasis on the local environment even to a larger extent than what is expressed in the survey results. Observation showed little reference made to the global environment, something that is, also, recorded in the interviews. The reasons proposed, mainly, refer to the lack of time, the difficulty to escape from the strong influence of the local identity, little emphasis placed by the curriculum and the young age of the students.

There are some issues that need to be mentioned with regards to the evaluation of the cultural approach towards the development of the students' national or global identity. Firstly, there are elements of a weak consensus found in both the quantitative and qualitative data analysis, which might point to different perceptions of the issue within the population of the teachers and headteachers. Furthermore, change negative characteristics focusing on the local environment maintain their strong presence in the composition of the desired culture according to both quantitative and qualitative data. The analysis of the national curriculum, on the other hand, shows an effort by the Ministry to promote a balanced emphasis on the development of the national and the global identity as a suggested educational approach. However, this message does not seem to have reached the school, once again. It is regarded that, despite growing tendencies towards a more conscious consideration of the global environment, findings agree with relevant literature assumptions that contemporary schools remain organized and designed mainly on the basis of the local or national economic, political and social characteristics and purposes (Green, 1997, Spring, 2002 in Zadja, 2010). It is the author's concern that, although coming from previous decades, such literature assumptions, still, remain relevant.

4.2.2. Beliefs about change.

According to the survey findings, the actual school culture is found on the change positive spectrum in all areas investigated. The survey results point to a school culture characterised mainly by beliefs that change is a positive thing and to teachers and

headteachers that are open to relevant suggestions and new ideas. Although the introduction of new practices and concepts is, also, reported in the interviews as something that has happened lately in the Greek educational system, it is repeatedly mentioned that, often, there is an identified level of fear and suspicion towards such suggestions and initiatives. This leads to certain levels of resistance, unwillingness or hesitation to undertake change initiatives, which are expressed at least by a part of the population, as it is, also, found in other research conducted in the country in previous years (Kavouri, 1998; Kiriakodi & Tzimoyiannis 2015; Kouloumparitsi, 2008; Spiropoulou et al., 2007).

The role of the headteacher is found to be particularly supportive to the introduction of new concepts and practices, according to both the teachers and the headteachers' quantitative evaluation of the actual school culture. Qualitative findings from the interviews and the observation of school meetings agree. Headteachers were found, not only to be open to suggestions, but also to put effort in motivating the introduction of change and in promoting the use of new practices and the implementation of innovative projects. In fact, in the relevant question of the follow-up interviews with regards to who manifests stronger resistance to change, most participants readily excluded the headteacher from the ranking on the basis of the belief that change initiation is an integral part of his/ her role. It has to be mentioned, though, that there is evidence that this may not, always, be due to the headteacher's beliefs regarding the importance of new educational practices and concepts, but rather due to his/ her role as the mediator between the state objectives and the school practice.

This specific dimension, as a potential explanation of the headteacher stance, may be found to be particularly rational in the context of the top-down management mentality of the educational system, that favors the development of a civil-servant "obsequious" mentality (Kavouri, 1998). On the other hand, it may be related to relevant headteacher training initiatives, such as the one implemented in 2012, during which 63 headteachers were trained and certified for their efficiency in administration and leadership (Ministry of Finance, 2013). It has to be mentioned, however, that the particular certificate was planned to be used as a requirement for headteacher selection, something that was not eventually implemented. In addition, although the training was implemented, there is

no evaluation data of the program outcomes, giving an example of a piecemeal policy approach (OECD, 2018).

On the other hand, quantitative findings place families in the middle of the spectrum between purely knowledge-oriented traditional practices and change creative elements. In fact, the role of the families is assessed by both teachers and headteachers as the item with the most change negative characteristics among all the items studied in the survey. The interview findings are in agreement, since families are reported as the group with the highest resistance levels, among the groups of the students, teachers and headteachers. It is mentioned, however, that the stance of the teacher towards the introduction of change and his/ her relationship with the families greatly affects the families' stance, as well. According to qualitative findings, even though families may be hesitant or, even, negatively predisposed towards new educational concepts and practices, a teacher who is determined and sure about his/ her choices can significantly affect the families' perception, taken that there is efficient communication and a relationship of trust between the two parts.

4.2.3. Strength and homogeneity of the school culture.

According to the quantitative findings of the current research, the actual school culture combines characteristics from all four different culture types of the model analyzed in Chapter 3.5. Although the change friendly culture type is the most dominant, the contribution of the remaining three types in the formulation of the culture remains significant. This, basically, means that the survey participants recognize the existence of differentiated beliefs, values and practices within their schools, which might point to an unclear conceptualization of the aims and objectives of the educational system, potentially a sign of a weak cultural basis, or the existence of subcultures with different characteristics, possibly a sign of heterogeneity.

The lack of a strong, clearly defined cultural basis is further, potentially, manifested, by the comparison of the aims and objectives proposed by the national curriculum and the understanding of these by the teachers and headteachers, which has, already, been discussed. Additionally, the combination of the observation data with the survey and interview data poses some questions with regards to whether the practices adopted are, in fact, the practices that one would expect according to the alleged actual school

culture. This became, especially, obvious after the comparison of findings in some concept areas studied, such as the development of social skills. More specifically, all the participants in the interviews of the third stage mentioned that the main relevant practice adopted in the classroom is team work, through relevant activities and projects. However, in 11 out of 15 of the classes observed there were no elements whatsoever of team work or student to student interaction, while even in the remaining classes the organization of students in teams was, mainly, done for practical reasons or in an unplanned way that did not show clear objectives of social skills development.

Similarly, in the case of some items, culture heterogeneity is more obvious and could, even, be expressed as a culture clash, as change positive and change negative characteristics are almost equally divided, or the two extreme sides on the predisposition to change spectrum, namely the change rejective and the change creative culture types, share similar percentages. This is the case, for example, in the evaluation of the school purpose by both teachers and headteachers, as well as the evaluation of the reported academic emphasis with regards to the development of personal, social and civic skills by teachers.

The qualitative findings from the interviews and the observation support the aforementioned quantitative findings. In the classes and school meetings observed, there was evidence that, although teachers and headteachers are, generally, positively predisposed to new practices, there is a part of the teaching population that resists either actively or passively. Resistance was, mainly, expressed through the teachers' choice to use purely traditional, teacher-centered methods or to abstain from the participation in collaborative or innovative projects. References to such cases were made in the interviews, as well.

Taking into consideration that the teachers enjoy increased autonomy in their classroom, it is understood that the development of subcultures, which may, even, be significantly different, is possible. Since teachers are free to choose the specific values and beliefs that will guide their teaching, the objectives of the educational procedures adopted and the practices used in their classroom, it is not obligatory for them to share a common ground with their colleagues. According to literature, the existence of subcultures within organizations may, even, be considered as rule, rather than as an

exception (Armengol Asparó, 2001). However, the specific, potential cultural fragmentation poses a concern, since culture homogeneity through shared values and norms is considered to contribute to commonality of purpose and a shared vision, elements that ultimately improve the learning procedure (Cavanagh, 1997, in Maslowski, 2006). Additionally, teacher collaboration and class to class collaboration is suggested to offer important advantages to the educational practice, but it remains an issue if effective collaboration can be developed among people with different cultures, or if the collaborating groups are, inevitably, limited to teachers sharing similar sub-cultures within the educational system.

4.3. Academic emphasis and practices.

In the discussion of the academic emphasis and practices, we will examine the skills addressed in the context of the Greek primary school and the specific practices through which they are developed. Special reference will be made to practices that promote the development of 21st century skills, as these are defined in the relevant literature.

4.3.1. Academic emphasis.

According to the research findings, there is a wide range of skills that is addressed in the everyday school practice. It is interesting to see, however, that the development of the personal, social and civic skills, as academic emphasis, is the only school culture area assessed as, mainly, change resistant by the teacher respondents of the survey. Although school culture with regards to skills development combines characteristics from the whole spectrum of predisposition to change, the dominant trait is that there is an effort on the part of the teachers to avoid deviation from the curriculum, addressing skills development only when "there is time". Consequently, it becomes evident that priority is given to content knowledge and academic achievement, an issue often discussed in literature within the context of the existence of rigid, normalization-oriented academic criteria that leave no space and time for deviation (Thomas, 2012).

Data that support this finding were gathered in the interviews and the observation stage, as well. Interviewees argued that skills development comes after knowledge development in priority, in primary education. The factor of the limited time due to an overloaded curriculum is, again, proposed as a core reason for this. Teachers' concerns

with regards to achieving the knowledge objectives set for the lesson were evident during class observation, as well. Although various types of skills were addressed, it remained obvious that, in the majority of the cases, this was not the objective. There was, almost, no data reported of pre-planned activities structured around the objective of the development of specific skills. In addition, it was found that particular emphasis was placed, first of all, on the development of personal skills related to class procedures and required behaviors, such as following rules and directions. Although such skills are transferable to general life situations, it is undeniable that their main role in the classroom is to facilitate the process of content knowledge development towards academic achievement.

Creativity and divergent thinking, which are separately evaluated due to the heightened importance attached to them in the literature regarding 21st century skills (Martin, et al. 2016; Robinson, 2010), seem to be given more emphasis than the aforementioned personal, social and civic skills. The quantitative evaluation by both teachers and headteachers reveal strong change friendly and change creative tendencies. Some elements of practices aiming at creativity and divergent thinking were reported during observation, although it cannot be said that these would be evaluated as corresponding to the level reported in the survey. However, data from the observation of the school buildings showed elements of creativity and divergent thinking in the results of the projects exhibited. The contribution of projects to the development of the particular skills is, also, highlighted in the follow-up interviews. It is probable that the positive cultural predisposition towards creativity and divergent thinking is related to the introduction and implementation of projects which, mainly, take place in the Art subjects or the Flexible Zone hours but are not, commonly, integrated as practices in the general learning procedures.

With regards to the integration of the information and communication technology in the school practice as a way to develop digital literacy, both teachers and headteachers pointed to strong change friendly characteristics. These, mainly, refer to a daily use of technology in the classroom and practices that motivate students to integrate the use of ICT in their learning methods. The observation data, however, show a different picture. The majority of the lessons observed were developed with the use of traditional teaching resources with scarce use of technology, while in 69% of the classes observed,

there was no ICT use at all. The goals set by the Ministry of Education for the action plan “Digital School” (part of the “New School” reform initiative that was initially signed for the period 2007-2013 and, then, extended until 2020, www.edulll.gr), for a full integration and incorporation of ICT in the everyday teaching practice do not seem to be accomplished, yet. Participants in the interviews mentioned that the development of digital literacy is, mainly, the responsibility of the Computer Science teacher. There have been cases, however, where specific interviewees mentioned the implementation of various relevant projects. It was interesting to see that teachers tended to be grouped in two categories, those that used a variety of ICT tools and those who used no ICT at all. This may be a sign that teachers who have the relevant knowledge or experience manage to integrate ICT in their classes, whereas those who do not, are inevitably hesitant. This potential explanation points to a need for training in the use of ICT.

4.3.2. The practices used.

Particular emphasis is placed in the study of the dimension of practices as they are the most visible and accessible layer of culture, which can manifest tendencies in the deeper, invisible layers of values and assumptions (Schein, 1985). The practices used are, mainly, investigated through the qualitative data from the observation and the interviews. During the observation of the classes, a variety of practices were reported from the whole spectrum, from merely student-centred methods to strongly teacher-centred ones, with a tendency towards the end that represents a stronger teacher role. Probably, the clearest finding is the widespread use of inquiry-based teaching, within the frame of the emphasis on content knowledge development, in the majority of the classes. This points to a tendency towards the development of a more active learner in the educational system, although, in most cases, the teacher maintains his/ her central role.

With regards to skills development, the main practices used include the discussion, teacher advice and class rules, according to the observation results. The discussion is, also, mentioned in the interviews as the main method used in the development of all the skills in question. Additionally, a variety of activities and tasks of different structures were reported both in the observation and interviews. It has to be mentioned that the practices that referred to the development of skills are not pre-designed on the basis of specific objectives. In most of the cases, the teachers use arising occasions as

opportunities to discuss the necessity of skills, such as communication, or values, such as respect, according to both interviews and observation findings. Furthermore, although the tasks and activities used require the practice of specific skills, it is not clear if the development of these skills is regarded as the main or, at least, one of the main objectives. According to the observation findings, in most cases, the practices used, merely, integrate traditional teaching resources, such as the board and the book. The information and communication technology is, mainly, used for practical reasons, such as the projection of the book, in order for students to stay focused.

In comparison to findings from previous decades, there is clear evidence of a growing tendency towards the implementation of projects in the everyday school practice (Spiropoulou et al., 2007). The interviewees mentioned numerous projects, either externally or internally designed, that had been implemented in their schools. The majority of the projects aimed at the development of knowledge and skills in combination, some of them clearly placing emphasis on the one or the other. Although, the researcher did not have the chance to observe a project in action in the classes reported, data from the observation of the school buildings support this finding, as the results of a great number and variety of projects were exhibited in the majority of the schools visited.

4.3.3. 21st century practices for the development of 21st century skills.

Data from the document analysis, the interviews, the observation and the survey are discussed in combination here. Suggestions with regards to new practices for new skills are made in the national curriculum. The methodological approaches suggested highlight the importance of the exploration and discovery of knowledge by students, within an active and creative learning environment. The student-centered element of the learning procedure is emphasized, along with the cross-curricular approach to knowledge development.

According to the quantitative data of the research, the school culture predisposition to innovative projects is mainly characterised as change friendly, with various externally designed projects implemented every year. It has to be mentioned, though, that there are elements of a potentially weaker consensus in the particular item, compared to the rest of the questionnaire items, shown by high standard deviations and wide mean-

median differences. This may be related to the teachers' uncertainty with regards to whether the implemented practices can, in fact, be characterised as innovative or new, as is expressed in the responses of some interviewees.

The definition of innovation in educational practices is a complex issue for scholars, as well. Brandon (2004) defines innovative teaching as a constructivist, social-constructivist, and student-centered process during which students engage in active learning within the context of a supportive environment and through authentic and relatable problem-solving activities (Brandon, 2004). The element of creativity in teaching that can contribute to unlocking the students' creative potential is, also, discussed (Ferrari, Cachia & Punie, 2009). In the context of the particular research, the concepts of student-centeredness, active student engagement, authenticity, reference to the contemporary conditions and context, and educational creativity are, particularly, highlighted as indicators of innovative or 21st century teaching. It is regarded as a misconception that innovation in teaching can be achieved only through the introduction of some novelty (Zhu, Wang, Cai & Engels, 2013).

Qualitative findings from the interviews, mainly, and the observation of the school buildings, secondarily, confirm the data related to the increased implementation of projects the past years. The integration of projects as part of the educational process is found to be related to the introduction of new teaching and learning approaches aiming at 21st century skills. Interviewees argue that the educational projects suggested and implemented are the exception to a rule of teaching practices that only contribute to the development of 21st century skills to a small extent. In addition, teachers who have organized or have participated in externally designed specific goal-driven projects seem to be able to make more references to student-centred teaching methods that aim at the development of skills, such as team working or an alternative use of resources.

Examples of projects and practices that are considered worth mentioning for their innovative spirit, their emphasis on skills and their clear reference to the contemporary conditions and context include:

- The integration of students in the organization and management of non-school-typical installations, such as school gardens or school museums. Such projects

implicate students to non-traditional school procedures addressing a variety of skills and inspiring a creative vision.

- Activities that reach outside the school limits and create bridges with other schools and the community. Practices of participation in community processes are held to be particularly significant in the attempt to develop students' engagement, motivation and skills (Robinson, 2013). Especially when such activities bring students in communication with students from foreign countries, it is considered that core aspects of the 21st century conditions, such as globalization and co-existence in heterogeneous environments, are addressed.
- Creative and meaningful ICT integration in the educational process. Reported projects that motivated students to interact creatively with ICT, moving from the identity of the learner to that of the digital content producer are regarded as innovative approaches to the development of digital literacy.
- Practices that reposition emphasis from the strict quantitative evaluation of academic progress, according to firm, predetermined standards that do not respect students´ individuality, to a more flexible qualitative approach to evaluation, as a tool for individual improvement in the areas of knowledge and skills development equally. A reported example was assessment with the use of portfolios created by the students themselves, which was implemented collectively in all the classes of the school. In addition, efforts to reposition emphasis away from stressful knowledge development are, currently, made through the project of the Ministry of Education "Schoolbag at School", which suggests a weekend free of homework per month with the aim of more free, creative time for the students and their families.

4.4. Value gaps

The identification of value gaps between the actual and the desired school culture is conducted within a mentality related to quality improvement concepts (Detert et al., 2001). The areas most in need of improvement are identified, mainly, through the combination of data from the survey and the follow-up interviews, which make references to the desired school culture, further than the actual one. First of all, there is clear consensus with regards to an identified need for change in a variety of areas

according to both quantitative and qualitative data. However, there are some specific areas that seem to require special attention.

Quantitative data show the teachers' and headteachers' perception that the family's cultural predisposition to change is the aspect most in need of change. The survey respondents wish for families that will be more open to change, will support their children in new practices and will cooperate with the school towards the achievement of enhanced results. It seems, however, that teachers and headteachers would not, necessarily, want families to have a very active role, making suggestions and encouraging change, but rather to be followers in the procedure. Qualitative findings support the need for improved school-family relationships and the development of feelings of trust. Although, other concepts are given higher priority in the interviews, it is recognized that out of the areas mentioned that coincide with areas studied in the questionnaire, this is the most highlighted one in interviews, as well. As a result, it is considered that qualitative and quantitative findings agree.

Qualitative findings manifest an expressed urgent need for a more flexible and less loaded curriculum, for flexibility in the school working hours and continuous teacher training. The desired change in all three areas mentioned is, ultimately, related to the improvement of the conditions that will contribute to a shift from a mentality that, merely, focuses on academic achievement to one that favors the combined development of content knowledge and skills. Additionally, the practical issue of the limited time available due an overloaded curriculum is discussed. Although there is not an item directly investigating the issue in the survey, the evaluation of the academic emphasis on skills by teachers as something that is realized mainly "when there is time", manifests an indirect support to the qualitative findings.

According to qualitative findings there is, also, a great need for the organization and implementation of continuous teacher training that will help teachers stay up-to-date with new conditions, educational concepts, practices, potential and options. Training would, further, help the teacher manage the feelings of insecurity towards the unknown that are related to increased resistance to change, through building his/ her self-confidence in the use of new teaching practices.

4.5. Suggestions for Policy

A systematic, enhanced approach to the management of the introduction of change and innovation is deemed, particularly, significant and urgent based on two contradictory facts. Firstly, the recognized need for new educational concepts, practices and mentalities that would better correspond to the current, social and professional conditions. Secondly, the identified high resistance levels to such attempts in education and the negative change implementation results discussed in literature and research.

The final objective of the evaluation of the actual and desired cultural predisposition to change in the current research is to provide suggestions that would, potentially, contribute to the enhancement of the change implementation results. In order for these suggestions to be formed, the areas most in need of change are prioritized, according to the findings of the research and the belief that bottom-up change initiation is related to improved educational reform results (Hargreaves et al., 2009). In addition, the specific characteristics of the Greek educational system are taken into account, with emphasis placed on factors or resources within the system that might affect intervention outcomes (Roach & Kratochwill, 2004). In other words, the researcher is considering the elements that can be used, in order for systemic obstacles to be overcome, in the effort to achieve enhanced results in the process of the introduction of new practices for the development of 21st century skills. The areas in need of intervention, the core contextual factors and the potential resources are shown in Table 75.

Areas most in need of change	Academic emphasis, flexibility (curriculum, school hours), training, school-family relationships
Contextual factors	Top-down management, central decision-making, defective communication within the educational system
Potential resources	Consensus about the need for change, management, teacher autonomy and flexibility in the classroom, high teacher motivation, increasingly wider use of projects

Table 75. The areas most in need of change, the contextual factors and the potential resources of the Greek primary education

According to the combined analysis of these three elements, the suggestions for policy are:

- Investment in the improvement of the communication and relationships among all educational stakeholders, through systemic support and training.

The importance of relationships is highlighted in all systemic approaches to culture with the concepts of a shared purpose and meaningful collaboration given particular emphasis (Snyder & Anderson, 1986). Trust, specifically, as a core condition in the development of a collaboration mentality, is seen as a major factor that can facilitate openness to innovation and new processes, through feelings of collegiality and security, especially in times of change when relationships undergo pressure (Hallam & Hausman, 2009).

Policies that would aim at the improvement of relationships can be directed at three levels, the family, the school, the system. Actions that will build bridges of communication and a feeling of shared purpose between the school and the family may include the design of more systematic communication channels, as well as training programs on issues of importance, in which teachers, headteachers and families will participate in mixed groups. Shared participation in training may contribute to the development of relationships among the group members, and a feeling of commonality of experience and purpose.

At the school level, meaningful collaboration is considered particularly important, as, according to a growing body of research, it is linked to enhanced professional development and school improvement (OECD, 2018). The promotion of more projects that will be based on teacher to teacher collaboration, on collaboration between different levels and ages of students or different subject areas may contribute to break the barriers between the classes. It is regarded, though, possible that teachers might need support with regards to organization, or relevant training, as this is not a common concept in the class autonomy functional conditions of the primary school.

At the system level, it has become clear from the findings that a variety of issues arise due to the defective communication among the educational system layers. Channels serving a more effective information flow need to be developed, through which ideas and objectives will be more clearly communicated through different educational levels and units. Without this, central initiatives, regardless of their quality, may stand little chance of success, due to a misinterpretation of messages, as seems to be the case with the new national curricula. The latest three-year reform plan announced by the Ministry of Education includes, once again, the revision of material related to the curricula as

one of its aims (www.minedu.gov.gr, 2017). Although continuous improvement is a positive step, it remains a concern for the author that such positive initiatives may keep being repeated as aims and intentions, but their desired results may not be achieved, if their essence is not successfully communicated to the school level.

In the organization of the communication channels, bottom-up information flow must be allowed and motivated. It is held that bottom-up initiated change is particularly important in a system characterised by instability and often changes in the management positions of the Ministry of Education (Panitsides, 2014). It is often the case that policymakers do not stay long enough in the system in order to see the implementation of policies, its results and essentially accept responsibility for them (Mulford, 2009). Teachers, on the other hand, are the one stable basis of the system that stays long enough to see the introduced change implemented and the related outcomes. Consequently, their voice and experience should be valued.

In addition, it needs to be taken into consideration that any processes of change, inevitably, include unpleasant feelings that form the psychodynamics of educational units. Such feelings should not be disregarded or suppressed but, rather, they need to be expected and, even, welcome as an integral part of the change process that can, actually, contribute to its evolution. Providing teachers with emotional support is essential in cases when they have to take the risks included in coping with change. Allowing inevitable emerging feelings to be communicated and dealt with is of major importance, not because it aims at helping teachers "feel better" against the pressure stemming from reform, but because it creates a space where these feelings can be reconciled and effectively integrated in the process (Schmidt & Datnow, 2005). Systematic school-specific communication and expression activities for the teaching team organized and conducted by expert professionals, such as sociologists or psychologists, and relevant training for the headteacher may contribute to a more effective management of the school psychodynamics.

- Investment in teacher training within the context of the 21st century conditions

The need for continuous teacher training is, already, recognized within the context of the Greek educational system, which is built on the basis of a lifelong employment status. The three-year reform plan announced by the Ministry of Education for the

period 2017-2019, clearly, defines teacher training as a core priority, aiming at a more systematic approach through the establishment of a "national system of lifelong training" (www.minedu.gov.gr, 2017). The question that arises is what the content and practices of current and future training initiatives will be. The results of the current research could provide some, potentially useful, suggestions with regards to that.

The first basic step for the introduction of change is the recognition of a need for it, which is already a reality in the Greek educational system. There are some issues, though, that might require attention. Firstly, there is a proportion of the population that, still, does not recognize the urgency. Secondly, there is an identified gap between theory and practice with teachers recognizing the need to a great extent but not adopting the relevant practices to a corresponding extent. Making a case for change is the first stage in change implementation, as it is associated with increased commitment in later stages, an element that is particularly valuable in attempts to change resilient, long held cultures (Blood & Thorsborne, 2005).

Consequently, an important basic step in training could be the communication and discussion of information about the social and economic conditions of the 21st century and their potential effect on the life of the students today and in the future, as adults, by experts in different areas. This is expected to result in raised awareness and a more conscious approach to the need for change, and, eventually, in the creation of the basis for the enhancement of the change implementation results, as organizational members are found to be motivated to apply change according to how much they value it (Weiner, 2009, in Inandi & Giliç, 2016). It is, also, expected to shed light to the range of skills that the students might need in their personal, social and professional adult life. A teaching population that is updated and well-informed could better challenge long held beliefs and common sense on the basis of a rational interpretation of the conditions, consequently contributing to what Robinson (2010) holds the aim of education to be, namely revolution even more than evolution.

As a second step, training must focus on the practices that can lead to the development of the particular skills. At this stage, it is considered important, however, that teachers are given the chance to develop the target skills themselves, first, through experiential learning. As it is, often, mentioned by teachers, it is a paradox that they are expected to

teach skills that they, themselves, have not been trained in, such as team work or ICT, for example. Consequently, there is a recognized need for a systematic approach to training that will aim at the development of the teachers' skills first, and, then, of their knowledge and expertise with regards to practices that can guide students towards the development of these skills, as well. The significance of ongoing training is, further, highlighted by the fact that the teaching population is employed on the basis of guaranteed lifelong employment, either, merely, as a result of the graduation of a specific university department, or through exams designed on criteria that might have been relevant to a specific point in time but may not be relevant any more.

- Investment in headteacher training within the context of the 21st century conditions

Leadership is highlighted in literature as a decisive factor in the discussion of the systemic improvement in teaching and learning procedures (Zajda, 2010). In the Greek educational system, the role of the headteacher is identified as a, potentially, major resource in the introduction of change because of its reported strongly positive predisposition to change, in combination with its strength in a system that is structured around hierarchy. Previous research in the national educational system has highlighted the great impact that the headteacher can have on the school climate (Zmpainos & Yiannakoura, 2010; Gournaropoulos, 2007).

Taking into consideration the importance of the role in combination with its complexity, it becomes evident that headteacher training needs to be given specific attention. If the role is to fulfil its great potential, a well-organized, goal-oriented approach to headteacher training ought to be adopted. Headteacher training and appraisal, that is promoted as a priority in latest reforms, ought to not be, merely, limited to the administrative function of the headteacher recruitment and selection, but rather be ongoing and meaningfully oriented towards school improvement (OECD, 2018).

Leadership concepts that would need to be addressed in the training, according to the literature discussion and the research findings, would include relationship management, workplace motivation, vision inspiration, conflict management and other organizational management related concepts that go far beyond simple administrative tasks.

- Empowerment of the headteacher's and the teacher's role -More flexibility and decision-making at the school level

With headteachers that are better prepared for the range of the requirements of the role and teachers that are updated and trained, there is no reason why the decentralization of the decision-making processes, which is repeatedly recognized as a drawback of the Greek educational system (OECD, 2016c), should look like a utopia any more. In fact, a stronger headteacher role associated with greater school autonomy is a suggestion, also, made by OECD (2018) in its report on policies for a bright education future for Greece.

Higher levels of functional flexibility and increased responsibilities at the school level can contribute to the successful, meaningful and contextualized introduction and implementation of change. To start with, increased participation in decision-making at the school level can facilitate the introduction of new process through wider acceptance and, thus, lower levels of resistance (Armengol Asparó, 2001). The concept of teacher ownership of educational change and improvement is of particular significance (Saunders et al., 2017). More administrative and local policy autonomy may contribute to increased school level motivation, which can break the reported mechanistic inertia and improve the results of reform implementation (Panitsides, 2014). Although recent policy initiatives have manifested a tendency towards the introduction of some level of autonomy, at least with regards to pedagogy, the scope and extent of this is, still. under discussion (OECD, 2018).

Areas where more flexibility and participation in decision-making might prove significant include the design and implementation of school specific training for the headteacher, the teachers and the families, the organization of the school time and space or the creation of local curricula. Local decisions in any of these or other areas may comply with general national directions but will develop according to the school needs identified and the objectives set. A long-term systemic change that is expected to bring positive outcomes, also, refers to the expansion of the headteachers' responsibilities in the area of teacher selection and appointment, also suggested by OECD (2018).

- More effective use of projects and introduction of new subject areas

Learning with the use of projects is held to contribute to the development of 21st century cognitive and socioemotional skills (Quint & Condliffe, 2018). According to the research findings, a growing tendency towards the implementation of a range of projects, which are shown to incorporate skills in the development of content knowledge, has been reported. Projects, in general, are found to favor skill development. What is more, it was specifically reported that areas where projects are most clearly skill-targeted, such as creativity and digital literacy development, are evaluated as more change positive. This may suggest that the introduction of more skill-oriented projects, with specific skill development objectives in other relevant areas, such as the personal, social and civic skills, may contribute to the achievement of improved results in these areas, too.

It is worth mentioning that the areas of creativity and digital literacy as skills, which are evaluated as more change positive, in comparison with the personal, social and civic skills development, are approached through specific subjects taught by specialized teachers. The existence of specific teaching hours devoted to art and computer science in the school schedule and the employment of specialized teachers seems to have had a positive impact in the development of these skills by students. Consequently, policy makers might have to consider the option of following the same strategy with regards to personal, social and civic skills, allocating time sessions specifically oriented to the development of these skills, which will be conducted by specialized professionals. If the skill-oriented sessions achieve to help students develop their personal, social and civic skills, it may be easier for teachers to incorporate relevant tasks and activities in the everyday classroom practice, afterwards. Then, classroom practices that will combine skills and content knowledge, will allow students to, further, practice already acquired skills, with the help of a teacher that has, also, already received relevant training.

4.6. Research Ethics

The current research has been designed on the basis of the ethical principles of respect, beneficence and justice. The research content, design and procedures were submitted for approval to the Institute of Educational Policy, the purpose of which is “the

scientific research and study of issues that regard primary and secondary education, as well as the transition from secondary to higher education, and the ongoing scientific and technical support of the planning and implementation of educational policy on these issues" (http://iep.edu.gr). The Institute of Educational Policy is the authority responsible for assuring that ethics in research in the Greek education is respected. The current research was granted permission after a process of evaluation of the aims, research design, research ethics and expected contribution to the educational system (Registration number: Φ15/ 188309/200311/Δ1, see Appendix, Item 7).

Participation in all stages of the research has, only, taken place on voluntary consent, of which participants had been informed beforehand. In cases when the participants' identity was obvious to the researcher, the teachers and headteachers were given an informative form of consent to sign (see Appendix, Item 1). Participants were informed that they had the freedom to withdraw from the procedure at any point they wanted without consequences (Cohen, Manion & Morrison, 2009). The participants' privacy and confidentiality of data is protected through all stages of the research procedure. According to McMillan & Schumacher (2006), these two terms mean that the participants should not be identifiable in the data analysis. For this reason, participants in interviews, as well as observed classes were assigned code numbers in the procedure of the transcription of data.

The data collection procedure is recorded with transparency and is open to other researchers and anyone interested. All choices regarding methodology and procedure are reported. All primary data is available in the CD accompanying the current thesis.

4.7. Limitations and Further Research

In the process of the design and implementation of the current study, there have been some limitations that the researcher had to acknowledge and address when possible and which are presented here. The limitations recognized are, mainly, related to the vast and complex nature of the concept of school culture in combination with the finite research resources.

The research context is placed in the Greek public primary education in Greece, with the particularities of the system discussed in the relevant chapter of the literature review. Although there has been an initial attempt to collect data from the region of the country, it, soon, became obvious that this would not be possible within the timeframe and resources of the research. For this reason, the researcher decided to focus on one of the 13 educational administration regions, namely Crete. The specific choice was made due to practical reasons that would allow the researcher to visit the schools personally, in order to achieve higher response rates in the survey conducted. The survey sample managed to be representative of the population of teachers and headteachers of the region, with regards to numbers as well as composition. In addition, the system characteristics analyzed in the literature review fully correspond to all 13 regions equally, Crete included. However, it remains a concern if the results could be generalized at a national level, since the sample is limited to one geographical zone only. Consequently, it is held that the repetition of the research in other regions or at a national level in the future would result in conclusions that could be more safely generalizable to the national educational system. The conduction of the research in other regions would, also, allow a potential comparison of findings that may lead to a deeper analysis of specific factors that affect the concepts investigated.

School culture is found to be influenced by the perspectives, decisions and actions of all people that are included in the educational process as professionals or individuals. The current research is focused on the perspective of the teachers and headteachers of public primary schools. Through the development of the research, it became evident that the teachers and headteachers recognized the role of the families to be of great importance in the formulation of school culture in the Greek educational system, particularly attributing to it more change negative characteristics, in comparison to other investigated aspects. Taking this finding into account, it is considered a limitation of the research that its aspects are not investigated from the perspective of the families. It is believed that future research of the cultural aspects related to change from the perspective of the families would be of great interest and would contribute to a more holistic view of the identity of the school culture.

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APPENDIX

Item 1

Consent form for participation in research

The purpose of this research is to study the existing and desired school culture in primary education in Greece, focusing on its predisposition towards change and the conditions of the 21st century.

Your participation in the research will not result in any way in a change in your welfare or any other risk. The information derived is strictly confidential and your name will not appear in any part of the results description and analysis. Your participation is completely voluntary. At any given moment you are free to withdraw your participation if you wish. No financial or other incentives are provided for your participation in the research. Please, do not hesitate to share any questions you may have before signing this. For any question or thought that may arise after the end of the research you can use my contact information as listed below.

Name: Areti Chalkiadaki
Contact Phone: 00306948753482/ 0034658902122
Email: aretich@yahoo.gr

By signing this consent form you declare that you have read this and wish to participate in this research, as is described above.

Signature Date

Item 2

Questionnaire for teachers

The current questionnaire has been designed within the context of a doctorate research in Greek primary education which is conducted under the supervision of the Autonomous University of Barcelona. The aim of the questionnaire is to investigate the school culture of primary education especially with regards to the introduction of new and innovative teaching practices.

Thank you in advance for your valuable time.

Please, circle/ fill in the answer that describes you best.

Sex:	Man	Woman			
Age:	<35	36-45	46-55	>55	
Studies:	Bachelor studies Master studies Doctorate studies Post- doctorate studies Other:				
Specialty:					
Work experience (years):		0-10	11-20		>20
Service in the particular school (years):		1-5	6-10	11-15	>15
School size (permanent posts):		1-4	5-10	11-15	>16
Population of the school area:		<2000 inhabitants		>2000 inhabitants	

Directions for answering the questionnaire

In every question, please divide 100 points among the 4 alternatives according to what happens in your school (left column) and what you would like that happened in your school (right column).

Actual situation	**Question 1. Purpose of education**	**Desired situation**
	In our school, we believe that the purpose of education is to provide students with thorough knowledge in basic subject areas in order to guide them to academic success, which we hold that will guarantee them professional progress as well.	
	In our school, we believe that the purpose of education is to offer students profound academic knowledge and some basic personal, social and civic skills which will help them become successful professionals.	
	In our school, we believe that the purpose of education is to guide the student towards his/ her all-round development as a person, a citizen and an employee.	
	In our school, we believe that the purpose of education is to empower students and inspire them to bring change and create the world they would like to live in.	
Total: 100		Total: 100

Actual situation	Question 2. Management	Desired situation
	The headteacher takes decisions individually and imposes them with the aim of sustaining the long familiar school processes and blocking change.	
	The headteacher, highlights the risks of the introduction of new practices with the aim of sustaining stability in the school and postponing the introduction of change.	
	The headteacher welcomes new ideas and supports their implementation both mentally and practically.	
	The headteacher encourages teachers to try new things, updates teachers about change in education, supports and guides the internal planning, introduction and implementation of innovative projects.	
Total: 100		Total: 100

Actual situation	Question 3: Teachers collaboration	Desired situation
	In our school, we work independently and only use methods we have tried for years and that we are very familiar with.	
	In our school, we prefer to follow our autonomous teaching routine and rarely cooperate with each other in order to try something new.	
	In our school, we cooperate willingly to try externally suggested ideas and to implement introduced change.	
	In our school, we cooperate meaningfully and on a daily basis, exchanging ideas in order to design, plan and implement new school specific teaching processes and innovative projects.	
Total: 100		Total: 100

Actual situation	Question 4. Students in our school	Desired situation
	Students require specific task guidelines that lead to rigidly measurable results. They complain when they have to change the way they do things and do not complete their tasks.	
	Students prefer to do things the way they know and appreciate specific guidelines. When they are given more flexible tasks, they require time and effort to get used to the new processes.	
	Students are happy to try new things, they enjoy new learning methods and more flexible activities and they adapt quickly.	
	Students often express their need to try something new, they ask for a change in teaching methods and make particular suggestions.	
Total: 100		Total: 100

Actual situation	Question 5. The families	Desired situation
	Families only believe in the effectiveness of traditional practices and judge negatively the teachers that do not use them.	
	Families are concerned when new teaching methods are used, they doubt their effectiveness, complain and need time to accept the changes.	
	Families welcome new teaching methods, they support their children in differentiated and more flexible tasks and they cooperate with the school to help overcome difficulties and enhance the expected results.	
	Families actively encourage the implementation of innovative projects, they ask for the use of new teaching methods. They often make their own suggestions regarding the development and implementation of innovative projects	
Total: 100		Total: 100

Actual situation	Question 6. Academic emphasis; personal, social and civic skills	Desired situation
	In our school, we place emphasis on measurable academic achievement and the development of a thorough knowledge of data and events, following the curriculum and the school schedule.	
	In our school, we try not to deviate from the curriculum, we focus on academic achievement and only teach personal, social and civic skills when we find some free time in the schedule.	
	In our school, we systematically implement externally suggested practices and projects aiming at the development of the students' academic knowledge as well as their personal, social and civic skills.	
	In our school, we systematically design and implement procedures and projects based on 21st century skills, as they are defined by various institutions and ourselves.	
Total: 100		Total: 100

Actual situation	Question 7. Academic emphasis- creativity	Desired situation
	In our school, students are asked to follow very specific procedures and to come up with rigidly measurable results. Deviation from the procedure or the result is negatively perceived.	
	In our school, students' deviation from the educational process is not encouraged but it is accepted if the expected result is produced.	
	In our school, students are mostly given relatively flexible tasks without rigidly predetermined outcomes to complete and different approaches are welcome and discussed.	
	In our school, students are systematically given challenges and resources and are encouraged to think in a variety of unpredicted ways. Creativity and divergent thinking are praised.	
Total: 100		Total: 100

Actual situation	Question 8. Teaching resources	Desired situation
	In our school, we use only traditional resources (books, pencils, etc.) that we are familiar with and refuse to integrate information and communication technology resources in the everyday school life.	
	In our school, we, prefer to use traditional resources and hesitate to use the available information and communication technology resources which are only used for practical reasons and for the facilitation of some school activities.	
	In our school, we use information and communication technology on a daily basis, encouraging students to, also, use it at home and integrate it in their learning methods.	
	In our school, we focus on the development of digital literacy, design learning tasks that enhance relevant skills and base our teaching on such tasks.	
Total: 100		Total: 100

Actual situation	Question 9. Academic emphasis- geographical scope	Desired situation
	In our school, we only discuss issues that are related to and affect the local community the school belongs to and our country, as we believe that the school must prepare the students for the specific national, cultural, economic environment.	
	In our school, we focus on issues related to our country, discussing issues of the world when a very important global issue arises, always through the national or local perspective.	
	In our school, we approach a variety of local and global issues through different cultural, economic and social perspectives beyond the national aspect as we believe that the students must be prepared to live in the globalized world.	
	In our school, we approach all topics with the aim of the development of students as global citizens and we focus on the concept of global interdependence.	
Total: 100		Total: 100

Actual situation	Question 10. Innovation	Desired situation
	In our school, we use teaching methods with which we are familiar, and we do not risk implementing projects based on processes that are not traditionally used.	
	In our school, we prefer doing things in familiar ways and when different teaching methods or innovative projects are suggested we avoid them if we can.	
	In our school, we implement systematically, throughout each academic year, innovative projects and new externally designed and suggested teaching practices.	
	In our school, we systematically cooperate on the basis of the change we wish to bring in education and designing our own school specific innovative projects on which we base our everyday teaching.	
Total: 100		Total: 100

Actual situation	Question 11. Beliefs regarding change	Desired situation
	In our school, we believe that change endangers stability and safety and has to be avoided.	
	In our school, we doubt that change will bring improvement and thus we hesitate to implement it and we need time to accept it.	
	In our school, we believe that change is a good thing and we are open to suggestions and new ideas	
	In our school, we believe that the aim of education is to bring about change, so we devote a lot of thought and effort to that aim.	
Total: 100		Total: 100

In the next stage of the research, there will be short interviews with the aim of discussing further and more thoroughly the concepts of the present questionnaire. If you would like to be considered for participation in the interviews, please fill in your email address:

_____

For questions and any type of comments, please contact the email address:
aretich@yahoo.gr

Thank you very much for your time and cooperation!

Areti Chalkiadaki
PhD student
Autonomous University of Barcelona

Item 3

Questionnaire for headteachers

The current questionnaire has been designed within the context of a doctorate research in Greek primary education which is conducted under the supervision of the Autonomous University of Barcelona. The aim of the questionnaire is to investigate the school culture of primary education especially with regards to the introduction of new and innovative teaching practices.

Thank you in advance for your valuable time.

Please, circle/ fill in the answer that describes you best.

Sex:	Man	Woman			
Age:	<35	36-45	46-55	>55	
Studies:	Bachelor studies Master studies Doctorate studies Post- doctorate studies Other:				
Specialty:					
Work experience (years):		0-10	11-20		>20
Service in the particular school (years):		1-5	6-10	11-15	>15
School size (permanent posts):		1-4	5-10	11-15	>16
Population of the school area:		<2000 inhabitants		>2000 inhabitants	

Directions for answering the questionnaire

In every question, please divide 100 points among the 4 alternatives according to what happens in your school (left column) and what you would like that happened in your school (right column).

Actual situation	**Question 1. Purpose of education**	**Desired situation**
	In our school, we believe that the purpose of education is to provide students with thorough knowledge in basic subject areas in order to guide them to academic success which we hold that will guarantee them professional progress as well.	
	In our school, we believe that the purpose of education is to offer students profound academic knowledge and some basic personal, social and civic skills which will help them become successful professionals.	
	In our school, we believe that the purpose of education is to guide the student towards his/ her all-round development as a person, a citizen and an employee.	
	In our school, we believe that the purpose of education is to empower students and inspire them to bring change and create the world they would like to live in.	
Total: 100		Total: 100

Actual situation	Question 2. Management	Desired situation
	The headteacher's role is to take and put to practice the necessary decisions in order to sustain the long familiar school processes and protect the school from change.	
	The headteacher's role is to highlight the risks and dangers of practices that have not been tried before in order to maintain stability and delay the implementation of change.	
	The headteacher's role is to welcome new ideas and support their implementation both mentally and practically.	
	The headteacher's role is to encourage teachers to try new things, to update teachers about change in education, to support and guide the internal planning, introduction and implementation of innovative projects.	
Total: 100		Total: 100

Actual situation	Question 3: Teachers collaboration	Desired situation
	Teachers in our school work independently and only use methods they have tried for years and that they are very familiar with.	
	Teachers in our school prefer to follow their teaching routine and rarely cooperate with each other in order to try something new.	
	Teachers in our school willingly cooperate to try externally suggested ideas or to implement introduced change.	
	Teachers in our school cooperate meaningfully and on a daily basis, exchanging ideas in order to design, plan and implement new school specific teaching processes and innovative projects.	
Total: 100		Total: 100

Actual situation	Question 4. Students in our school	Desired situation
	Students require specific task guidelines that lead to rigidly measurable results. They complain when they have to change the way they do things and do not complete their tasks.	
	Students prefer to do things the way they know and appreciate specific guidelines. When they are given more flexible tasks, they require time and effort to get used to the new processes.	
	Students are happy to try new things, they enjoy new learning methods and more flexible activities and they adapt quickly.	
	Students often express their need to try something new, they ask for a change in teaching practices and make particular suggestions.	
Total: 100		Total: 100

Actual situation	Question 5. The families	Desired situation
	Families only believe in the effectiveness of traditional methods and negatively judge the teachers who do not use them.	
	Families are concerned when new teaching practices are used, they doubt their effectiveness, complain and need time to accept the changes.	
	Families welcome new teaching practices, they support their children in differentiated and more flexible tasks and they cooperate with the school to help overcome difficulties and enhance the expected results.	
	Families actively encourage the implementation of innovative projects, they ask for the use of new teaching methods and often make their own suggestions regarding the development and implementation of innovative projects.	
Total: 100		Total: 100

Actual situation	Question 6. Academic emphasis; personal, social and civic skills	Desired situation
	In our school, we place emphasis on measurable academic achievement and the development of a profound knowledge of facts, sticking to the schedule and the curriculum.	
	In our school, we try not to deviate from the curriculum, we focus on academic achievement and only teach personal, social and civic skills when we find some free time in the schedule.	
	In our school, we systematically implement externally suggested practices and projects to help the students develop their academic knowledge as well as their personal, social and civic skills.	
	In our school, we design and systematically implement projects and teaching processes aiming at the development of those skills that will be useful for the future citizens and employees as they are recognized by relevant institutions and perceived by us.	
Total: 100		Total: 100

Actual situation	Question 7. Academic emphasis- creativity	Desired situation
	In our school, students are asked to follow very specific procedures and to come up with rigidly measurable results. Deviation from the procedure or the result is negatively perceived.	
	In our school, students' deviation from the designed educational process is not encouraged but is accepted if the expected result is produced.	
	In our school, students are mostly given relatively flexible tasks without rigidly predetermined outcomes to complete and different approaches are welcome and discussed.	
	In our school, students are systematically given challenges and resources and are encouraged to think in a variety of unpredicted ways. Creativity and divergent thinking are praised.	
Total: 100		Total: 100

Actual situation	Question 8. Teaching resources	Desired situation
	In our school, we use only traditional resources (books, pencils, etc.) that we are familiar with and refuse to integrate information and communication technology resources in the everyday school life.	
	In our school, we, prefer to use traditional resources and hesitate to use the available information and communication technology resources which are only used for practical reasons and for the facilitation of some school activities.	
	In our school, we use information and communication technology on a daily basis, encouraging students to, also, use it at home and integrate it in their learning methods.	
	In our school, we focus on the development of digital literacy, design learning tasks that enhance relevant skills and base our teaching on such tasks.	
Total: 100		Total: 100

Actual situation	Question 9. Academic emphasis- geographical scope	Desired situation
	In our school, we only discuss issues that are related to and affect the local community the school belongs to and our country, as we believe that the school must prepare the students for the specific national, cultural, economic environment.	
	In our school, we focus on issues related to our country, discussing issues of the world when a very important global issue arises, always through the national or local perspective.	
	In our school, we approach a variety of local and global issues through different cultural, economic and social perspectives beyond the national aspect as we believe that the students must be prepared to live in the globalized world.	
	In our school, we approach all topics with the aim of the development of students as global citizens and we focus on the concept of global interdependence.	
Total: 100		Total: 100

Actual situation	Question 10. Innovation	Desired situation
	In our school, we use teaching methods with which we are familiar and we do not risk implementing projects based on processes that are not traditionally used.	
	In our school, we prefer doing things in familiar ways and when different teaching methods or innovative projects are suggested we avoid them if we can.	
	In our school, we implement systematically, throughout each academic year, externally designed and suggested innovative projects and new teaching practices.	
	In our school, we systematically cooperate on the basis of the change we wish to bring in education and designing our own school	

	specific innovative projects on which we base our everyday teaching.	
Total: 100		Total: 100

Actual situation	**Question 11. Beliefs regarding change**	**Desired situation**
	In our school, we believe that change endangers stability and safety and has to be avoided.	
	In our school, we doubt that change will bring improvement and thus we hesitate to implement it and we need time to accept it..	
	In our school, we believe that change is a good thing and we are open to suggestions and new ideas	
	In our school, we believe that the aim of education is to bring about change, so we devote a lot of thought and effort to that aim.	
Total: 100		Total: 100

In the next stage of the research, there will be short interviews with the aim of discussing further and more thoroughly the concepts of the present questionnaire. If you would like to be considered for participation in the interviews, please fill in your email address:

_____

For questions and any type of comments, please contact the email address:
aretich@yahoo.gr

Thank you very much for your time and cooperation!

Areti Chalkiadaki
PhD student
Autonomous University of Barcelona

Item 4
Observation code

School meeting

School:
Date:
Place:
Participants:
Number of participants:
Duration:

Criterion	Type 1	Type 2	Type 3	Type 4
Teacher collaboration	There are no elements of teacher collaboration in the discussed processes and structures.	There are some few elements of teacher collaboration, especially for practical reasons.	Elements of teacher collaboration are evident in the discussion of processes and structures.	Teachers are organized in teams with specific structures and aims. There is person-to-person and team-to-team collaboration.
Decision-taking	The headteacher takes decisions individually and announces them.	The headteachers asks for the approval of decisions already taken. No substantial teacher participation in decision-making although some opinions are expressed.	The meeting participants vote for the majority of issues.	The meeting participant vote for all issues and can raise new topics for voting.
Participation in discussion	The headteachers is the only one talking. The teachers are passive listeners.	The headteacher speaks most of the time. Teachers only ask questions.	A number of teachers participate actively in the discussion, asking questions and making suggestions.	The great majority or all teachers actively participate in the discussion, asking questions and making suggestions.

Information communication	Information is presented orally, on the spot and only by the headteacher.	Information is presented both orally and in written form (e.g. formal documents).	Information is available in written before the meeting at a specific spot at school, while the headteacher presents it again. The majority of the teachers are aware of the topics to be discussed.	Information is sent to all teachers before the meeting through email or other means of communication. The headteacher presents it again, although it is evident that teachers are already aware of the topics to be discussed.
Beliefs about change (teachers)	Change is seen as something that endangers stability and has to be avoided.	There is doubt that change will bring improvement and hesitation to implement it.	Change is welcome as something positive and new ideas are willingly discussed.	Change is discussed as an aim and a core concern.
Beliefs about change (headteacher)	The headteachers takes decisions independently and imposes them with the aim of sustaining the long familiar school processes and blocking change.	The headteacher highlights the risks of the introduction of new practices with the aim of sustaining stability in the school and postponing the introduction of change.	The headteacher welcomes new ideas and supports their implementation both mentally and practically.	The headteacher encourages teachers to try new things, updates teachers about change in education, supports and guides the internal planning, introduction and implementation of innovative projects.

Class

School:
Date:
Level:
Subject:
Number of students:
Duration:
Teacher sex:
Teacher work experience:

	Type 1	Type 2	Type 3	Type 4
Academic emphasis: personal skills	Emphasis is on measurable academic achievement and the development of a thorough knowledge of data and events, following the curriculum and the school schedule. No element of personal skills development.	Some elements of personal skills development activities when there is free time in the schedule.	Combination of practices and activities aiming at academic knowledge and personal skills development.	Systematic implementation of personal skills development practices and activities. Academic knowledge is reached through such practices.
Academic emphasis: social skills	Emphasis is on measurable academic achievement and the development of a thorough knowledge of data and events, following the curriculum and the school schedule. No element of social skills development.	Some elements of social skills development activities when there is free time in the schedule.	Combination of practices and activities aiming at academic knowledge and social skills development.	Systematic implementation of social skills development practices and activities. Academic knowledge is reached through such practices.

Academic emphasis: civic skills	Emphasis is on measurable academic achievement and the development of a thorough knowledge of data and events, following the curriculum and the school schedule. No element of civic skills development.	Some elements of civic skills development activities when there is free time in the schedule.	Combination of practices and activities aiming at academic knowledge and civic skills development.	Systematic implementation of civic skills development practices and activities. Academic knowledge is reached through such practices.
Academic emphasis: creativity	Students are asked to follow very specific procedures with the aim of rigidly measurable results. Deviation from the procedure or the result is negatively perceived.	Students' deviation from the educational process is not encouraged but it is accepted if the expected result is produced.	Students are mostly given relatively flexible tasks without rigidly predetermined outcomes to complete and different approaches are welcome and discussed.	Students are systematically given challenges and resources and are encouraged to think in a variety of unpredicted ways. Creativity and divergent thinking are praised.
Academic emphasis: geographical scope	Only issues that are related to and affect the local community the school belongs to and our country are discussed.	There is focus on issues related to Greece. Very important global issue are discussed, always through the national or local perspective.	A variety of local and global issues are discussed through different cultural, economic and social perspectives beyond the national aspect.	All topics are approached with the aim of the development of students as global citizens and there is focus on the concept of global interdependence.
Students: participation and flexibility	Students require specific task guidelines that lead to rigidly measurable results. They complain when they have to change the way they do things and do not complete their tasks. Students passively	Students prefer to do things the way they know and appreciate specific guidelines. When they are given more flexible tasks, they require time and effort to get used to the new processes. Students	Students are happy to try new things, they enjoy new learning methods and more flexible activities and they adapt quickly. Students participate actively, asking questions. Elements of critical thinking.	Students express their need to try something new, they ask for a change in teaching methods and make particular suggestions. Students contribute actively to the structure and development of the learning process. They ask critical

	listen to the teacher and only speak if asked.	ask practical questions regarding the assigned activities and things they have not understood.		questions and make suggestions.
Teaching resources	Only traditional teaching tools (books, pencils, board etc.) are used.	Traditional teaching tools are mainly used while there is some scarce introduction of other tools.	Traditional teaching tools are combined with a variety of other tools in the majority of the activities.	Traditional teaching tools are only used as part of the variety of the tools used. The tools used are clearly determined by the aims of each activity.
Integration of ICT	Traditional resources (books, pencils, etc.) are used and information and communication technology resources are not used.	Information and communication technology is only used for practical reasons and the facilitation of some school activities.	Information and communication technology is used systematically. Students are encouraged to, also, use it at home and integrate it in their learning methods.	There is focus on the development of digital literacy and learning tasks that enhance relevant skills are designed and implemented.
Teacher´s role	Traditional teacher-centered structure. The teacher presents the information that needs to be learnt and tests its comprehension.	Teacher-centered structure with scarce elements of student empowering.	The teacher designs and directs flexible practices. Various elements of student empowerment.	The teacher encourages active student participation in the decision-making and the design of the learning process. Students are given responsibility.

School building

School:
Date:
Areas observed:

Criterion	Type 1	Type 2	Type 3	Type 4
Academic emphasis: personal skills	No elements of personal skills development in exhibited project results.	Scarce elements of personal skills development in exhibited project results.	Various elements of personal skills development in exhibited project results.	Numerous elements of systematic personal skills development in exhibited project results.
Academic emphasis: social skills	No elements of social skills development in exhibited project results.	Scarce elements of social skills development in exhibited project results.	Various elements of social skills development in exhibited project results.	Numerous elements of systematic social skills development in exhibited project results.
Academic emphasis: civic skills	No elements of civic skills development in exhibited project results.	Scarce elements of civic skills development in exhibited project results.	Various elements of civic skills development in exhibited project results.	Numerous elements of systematic civic skills development in exhibited project results.
Academic emphasis: creativity	No element of creativity development in exhibited project results.	Scarce elements of creativity development in exhibited project results.	Various elements of creativity development in exhibited project results.	Numerous elements of systematic creativity development in exhibited project results.
Academic emphasis: geographical scope	Elements of emphasis only on issues of the local community and the country.	Elements of emphasis mainly on issues of the local community and the country or very important global issues.	Elements of an approach of a variety of local and global issues through different cultural, economic and social perspectives beyond the national aspect.	Elements of a systematic approach of a variety of local and global issues with the aim of the development of students as global citizens. Particular focus on the

				concept of global interdependence.
Resources and tools	Only traditional school tools are available.	Traditional school tools are mainly available while there is some scarce introduction of other tools.	Traditional school tools are combined with a variety of other tools in the majority of the school areas.	There is widespread and systematic use of untraditional tools and resources.
Integration of ICT	Traditional resources (books, pencils, etc.) are used and information and communication technology resources are not used.	Information and communication technology is only used for practical reasons and the facilitation of some school activities.	Information and communication technology is used systematically. Students are encouraged to, also, use it at home and integrate it in their learning methods.	There is focus on the development of digital literacy and learning tasks that enhance relevant skills are designed and implemented. ICT is integrated in the school processes.
Teacher collaboration	No elements of teacher collaboration in exhibited project results.	Scarce elements of teacher collaboration in exhibited project results.	Various elements of teacher collaboration in exhibited project results.	Numerous elements of teacher collaboration in exhibited project results.

Item 5
Observation sheets

School meeting

School:
Date:
Place:
Participants:
Number of participants:
Duration:

Criterion	**Type 1**	**Type 2**	**Type 3**	**Type 4**
1.Teacher collaboration				
2. Decision-taking				
3. Participation in discussion				
4. Information communication				
5. Beliefs about change (teachers)				
6. Beliefs about change (headteacher)				

Notes

1.
2.
3.
4.
5.
6.
Other:

Class

School:
Date:
Level:
Subject:
Topic:
Number of students:
Duration:
Teacher sex:
Teacher work experience:

Criterion	**Type 1**	**Type 2**	**Type 3**	**Type 4**
1. Academic emphasis: personal skills				
2. Academic emphasis: social skills				
3. Academic emphasis: civic skills				
4. Academic emphasis: creativity				
5. Academic emphasis: geographical scope				
6. Students: need for specific directions, flexibility				
7. Students: participation, questions & suggestions				
8. Teaching resources				
9. Integration of ICT				
10. Teacher's role				

Notes

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2.
3.
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6.
7.
8.
9.
10.
Other:

School building

School:
Date:
Areas observed:

Criterion	**Type 1**	**Type 2**	**Type 3**	**Type 4**
1.Academic emphasis: personal skills				
2.Academic emphasis: social skills				
3.Academic emphasis: civic skills				
4.Academic emphasis: creativity				
5.Academic emphasis: geographical scope				
6.Resources				
7.Integration of ICT				
8.Teacher collaboration				

Notes

1.
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7.
8.
Other:

Item 6

Publications and Conferences

This research has resulted in the following publications and conference presentations. The full article texts can be found in the accompanying CD.

Peer-reviewed journals

Chalkiadaki, A. (2018). A systematic literature review of 21st century skills and competencies in primary education. International Journal of Instruction, 11(3), 1-16. doi:10.12973/iji.2018.1131a

Chalkiadaki, A. (2018). The predisposition of school culture towards change in public primary education in Greece. Education 3-13 (online). doi:10.1080/03004279.2018.1489875

Peer-reviewed conferences

Chalkiadaki, A. (2017, October 13-15). The relationship between school culture and change and innovation: Investigation with the use of a questionnaire. Paper presented at the 3rd International Conference of the Scientific Association for the Promotion of Innovation in Education. Larissa, Greece.
ISBN: 978-618-82197-7-9

Chalkiadaki A. (2016, April, 1-3). Opposition to change: a friend or a foe in the process of development? Paper presented at the 2nd Panhellenic Conference of the Institute of Humanities and Science: Local self-government, education, life-long learning and culture gateways to regional development. Heraklion, Greece.
ISBN: 978-618-83501-4-4

Item 7

Research Approval by the Institute of Educational Policy

Digitally signed by THEDOROS DIMITRAKOPOULOS
Date 2017.11.22 08:06:57 EET

HELLENIC REPUBLIC
MINISTRY OF EDUCATION,
RESEARCH AND RELIGIONS

GENERAL DIRECTORATE OF STUDIES OF PRIMARY AND SECONDARY EDUCATION
DIRECTORATE OF STUDIES, PROGRAMS AND ORGANISATION OF PRIMARY EDUCATION
DEPARTMENT A OF STUDIES AND IMPLEMENTATION OF PROGRAMS

Security Level:
To be retained until:
Priority Level

Marousi, 20-11-2017
Registration No: Φ15/ 188309/200311/Δ1

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E-mail: aretich@yahoo.gr
Cc.: 1. Ι.Ε.Π.
info@iep.edu.gr
2. Primary Education Administration of Heraklio
3. Primary Education Administration of Rethymno
4. School Units (Through the Administration Units)
5. Corresponding School Counselors (Through the Administration Units)

Topic: **Research Approval**
Relevant Document: Φ15/188309/3-11-2017/Δ1

In response to your application and taking into consideration the act No 44/30-10-2017 of the Directors Board of the Institute of Educational Policy, we inform you that the conduction of your research in school culture and change in public education, which can include teachers, headteachers and families, is approved. The research is to

take place during the academic year 2017-2018, according to the following specifications:

1. Before your visits to the schools, there must be communication with the Headteacher, the School Counselor and the teaching staff, so that the normal functions of the school unit are maintained.

2. The research must be conducted with the agreement of the Administration and the teachers of the school units. The teachers' participation in the research is always voluntary, it is under their responsibility and by their will.

3. In any case, the agreement of the research participants is required after they have been informed with regards to the content of the data collection tools of the research, the way the data is recorded and their right to withdraw any moment they wish to.

4. The research will take place during the academic year 2017-2018 and in the period from January 2018 until July 2018. The researcher must be present in the school unit during the conduction of the research, so as to make sure that: a) the confidentiality and anonymity of the responses during the completion and collection of the questionnaires is assured b) the school unit climate is not affected by a potential leaking of the relevant responses.

5. The semi-structured interviews of the 1st and 3rd stage of the research, in which teachers and headteachers of the school units will participate, will take place outside the teaching hours.

6. The questionnaires are always anonymous and codified. The research is to be conducted with the necessary discretion for the personal data of the participants to be protected. In any case, the scientific ethics described in the Detailed Research Plan submitted to the Institute of Educational Policy is to be followed.

7. An electronic copy of the research is to be submitted in CD form to the protocol of the Institute of Educational Policy, as well as the signed approval or not of the researcher regarding whether he/ she allows the Institute of Educational Policy to publish the research online. The copy, after its submission to the protocol, will be sent to the Library of the Institute of Educational Policy.

It is noted that the research material will be kept in the archive of the Institute of Educational Policy for two years after its discussion in the Directors Board and then it will be destroyed under the responsibility of the Department of Secretary Support.

The Directors of Primary Education to whom this document is sent, are asked to inform the school where the research is to be conducted.

Internal Distribution:

THE GENERAL SECRETARY

DIRECTORATE OF STUDIES,
PROGRAMS AND ORGANISATION
OF PRIMARY EDUCATION
Department A

GEORGIOS AGGELOPOULOS