Knowledge Management and Decision Making in Hellenic Primary Schools

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Abstract

The purpose of this thesis is twofold: on one hand it aims to present the current situation regarding knowledge management practices during decision making processes in the daily function of the public primary schools in the city of Athens, in Hellas. Additionally this thesis aims at discovering the perception of the educational and administrative personnel of the schools regarding the use of Information & Communication Technologies.

The present study engages in a qualitative research through an interpretivistic approach. Interpretivism is employed in an attempt to better understand the reasoning behind the choices made by the schools’ Directors, Assistant Directors and Teachers. Semi-structured interviews, stories / narratives, an observation and documentation are the data collection methods while a qualitative data analysis was used in order to produce the final results.

The research showed a ‘fault’ from contradictory and/or overlapping legislative directions towards the investigated roles (school Directors, Assistant Directors and Teachers), a high level of tacit knowledge residing in the minds of the school personnel, lack of knowledge regarding knowledge management, decision making theories and techniques and a fairly good but at times distrusting relationship with technology.

The thesis suggestion is the use of ICTs for the promotion of communication and exchange of views with the creation of a web application as a meeting junction of all primary schools for the sharing of knowledge leading to the effective decision making by the schools’ directors, assistant directors and teachers.

Key words: Hellenic public primary school, primary education, school Director, school Assistant Director, school Teacher, Knowledge Management, Decision Making, Information & Communication Technologies.
Acknowledgements

As in every important endeavour of my life a number of people have contributed for the completion of this thesis.

First and foremost I would like to thank my family – my mother Toula and father Lefteris for their patience and help with the care of my three-year old daughter, my husband John who’s been supportive and understanding and my daughter Andromeda – Mirto whose smile and mincing look gave me strength and inspiration.

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<th>Abbreviation</th>
<th>Complete Term</th>
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<tr>
<td>KM:</td>
<td>Knowledge Management</td>
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<td>DM:</td>
<td>Decision Making</td>
</tr>
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<td>ICTs:</td>
<td>Information &amp; Communication Technologies</td>
</tr>
<tr>
<td>EB:</td>
<td>Educators’ Board</td>
</tr>
<tr>
<td>IS:</td>
<td>Information Systems</td>
</tr>
<tr>
<td>HES:</td>
<td>Hellenic Educational System</td>
</tr>
<tr>
<td>PEI (in fig. 2):</td>
<td>Professional Educational Institute</td>
</tr>
<tr>
<td>AD (in fig. 3):</td>
<td>Assistant Director</td>
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1. INTRODUCTION

The first chapter of the thesis includes the problem statement and justification, the aim of the study and the formulated research questions and is concluded with the importance, the scope and the delimitations of the research.

1.1 BACKGROUND AND PROBLEM AREA

It seems widely accepted that information and all the associated activities, which is the collection, the processing, the storage and the retrieval of it, as well as the technology that supports these activities, are a big part of life, not only at the individual but also at the collective level. This is all the more true when it comes to larger entities such as school units and consequently the whole educational system of a country, as “Information Communication Technology (ICT) plays an important role in enhancing the quality of education” (Ghavifekr et. Al, 2013, p. 1344).

The technological developments of the world, which have assumed a dominant role in our lives, offer the proper channels through which the effective administration and dissemination of information is ensured. As Gunilla Bradley (2010) states “ICT is increasingly being used in almost every activity and increasingly embedded in everyday life (ubiquitous computing)” (p. 184). That, among other activities, also leads to meeting organisational needs to interconnect with others of the same level and type of subject, with the aim not only to vouch for the direct and efficient flow of data and information exchange but to provide enough human and time resources for research and work as well.

This technological outbreak, and especially the creation of internet, was fundamentally linked to research and education as these were the fields which initially contributed for its conception and further development (Howe, 2014).

An organisation such as a school, and especially of primary education, has always been considered as the first most crucial educational entity which produces knowledge with its most important objectives being the identification and development of educational and cognitive motivation, the assistance in the adjustment of students to the school life and the shaping of the fundamental elements of culture and human perception of the world (Clifford-Amos & Duda, 2011). However, that role is not appointed only from the student educational perspective but also from the side of the administration of a
school. Administering a school unit entails, among other activities, the management of the knowledge that will help the school personnel perform effectively their work tasks which includes “...policy formulation, decision making, record keeping, implementation of rules and regulations that govern the organization” (Samkange, 2013, p. 638). Such actions are part of the Knowledge Management (KM) process.

Knowledge Management as any process that is carried out within an organisational context, has its own goals. Besides the task of “…coordination and organisation of personal and organisational knowledge” (Friehs, 2003, p. 5) it aims at creating a culture that promotes continuous learning and sharing of knowledge among its members – in our case teachers and school administrative staff. Initially the origins of KM were found in the business world and the relevant theory was developed as a way to enhance the success of business enterprises (Nonaka & Takeuchi, 1995).

However, before discussing about the management of knowledge it would be helpful to offer clarification over the basic term of knowledge, which is a term that has given room for many discussions and debates. Michael Polanyi (1966) has analysed his view on the subject and has introduced the term ‘tacit knowing’. This approach seems to apply in the case of the Hellenic public primary schools. Although there is an official legislation framework which describes the responsibilities of the schools’ directors, the assistant directors and the teachers, they seem to act mainly ad hoc (each time differently according to the incident at hand) based on their personal experiences, knowledge and assumptions, thus verifying the lack of a specific knowledge base for the assistance in the administration of the schools. Despite the fact that there is availability of theoretical frameworks such as Decision Making (DM) (Brim, 1962; Dewey, 1978; Simon, 1977) and technological solutions, such as internet sites and social media which will be mentioned in more detail later on, that can assist in the decision making process, the smooth operation of the units depends largely on the competence of the people who are involved and not on a unified structured system. Most of the directors’ and teachers’ daily tasks refer to constant decisions, which technically speaking, refer to a problem solving process. Choosing and deciding on the best way and means for the successful solution of a problem is the ultimate purpose (Schön, 1983).

Although “…knowledge cannot be simply transferred from a sender to a receiver” (Newell at al., 2009, p. 155) best practices and common experiences can be shared in an attempt to reach problem solving faster and more efficiently. Information and Communication Technologies (ICTs) can offer the
opportunities for the adaptation of network information systems which allow for new ways for promoting “sustainability in a broad sense” (Bradley, 2010, p. 188) and be the mediator for such an exchange of important information between school directors and teachers.

Thus the basic element of this study is the unregistered tacit and explicit knowledge of the Hellenic public primary school directors, assistant directors and teachers and the way it is currently managed each time a problem must be solved and / or a decision needs to be made.

1.2 TOPIC JUSTIFICATION

The research, with respect to the awareness of the school personnel regarding knowledge management practices which will be conducted for this study, will show that there isn’t sufficient information concerning the management of knowledge towards decision making, in primary education, especially in Hellenic public schools. In the relative retrieved literature much attention has been paid to the schools’ leadership and specifically the principals’ managerial skills, which, among other points, have shown to be connected with high standards of organisational effectiveness and efficient resources management as well as a fruitful relationship between school directors an teachers and their active participation in the decision making process (Gold et al., 2003).

It is an indisputable fact that leadership is a multidimensional role which entails foremost the personal involvement of the schools’ directors in their activities and the competence to inspire the rest of the personnel, whether they are part of the administration staff or they are teachers, to become even more involved in the school’s procedures. It means having a clear vision and a set strategy for the development of the school’s administration which is not the result of divine inspiration but rather, as revealed by researches, the effect of on-the-job learning (Southworth, 2002). It is therefore understood that, in order to have a high performance school unit, a school director should seek ways to implement knowledge management practices. This is all the more needed in a setting where the actual administrative staff is absent and the teachers are called to assume duties of secretarial nature (Ghavifekr et al., 2013). Consequently factors like school culture, teamwork, knowledge sharing, new knowledge generation and digital advancement must be considered on the way towards the implementation of knowledge management (Samad at. al, 2014).
In the case of the Hellenic primary schools, even though there are internet based software applications which can unify all the public primary schools, there seems to be lack in providing the directors and the teachers with the opportunity to interact with each other and exchange ideas and ultimately valuable knowledge. Due to the great volume and importance of the knowledge that is being produced, research has been done regarding the relationship between humans and technology. The focus has, more specifically, been on the human perception of knowledge management, especially portrayed by managers and directors of the school units revealing that “Personal strategies also tend to influence the knowledge culture within schools” (Hamid, 2008, p. 259).

In fact different cultural environments may show the exact opposite behaviours. A qualitative study in primary schools in Hong Kong (which shares the same system as Hellas regarding the appointment of administrative responsibilities to the educators) revealed that useful means like technology, which otherwise may have been considered as a plus, are thought to be a barrier before the implementation of knowledge management (Leung, 2010, p. 70). The search has shown two basic issues: 1. The main source for retrieving information up until now has been, almost exclusively, the top in hierarchy personnel namely the school directors (Samad et al., 2014; Cheng, 1994; Southworth, 2002) and 2. The prevailing target has been the extraction of information or the depiction of the situation and not so much the reasoning or rationality that is hidden behind the ways knowledge is being produced, used and reused (Leung, 2010). The present research, using the documented experience of other researchers, tries to take the issue a step further by studying how decisions are made by managing knowledge during a decision making process addressing the practical needs as well as important issues in the daily function of Hellenic schools of primary education.

1.3 PURPOSE AND RESEARCH QUESTIONS OF THE STUDY

The main aim of the present thesis is to explore the current situation regarding the management of knowledge in the Hellenic public schools of primary education. More specifically, the focus is on the way the schools’ personnel (teachers, directors and assistant directors) use their professional knowledge, tacit and explicit, in order to make decisions on important issues during the execution of their professional tasks.
The proposal of the present thesis is a new approach in resolving difficult problems and the production of an action 'guide' for further use, reuse and exploitation. This suggestion, regarding the creation of an internet application uniting all public schools of primary education aiming at their interaction and web solidarity, will be described in more detail later on.

As Michael Polanyi (1966) has discussed, tacit knowing goes beyond the simple articulation of words and thus it is difficult to be transferred from one person to another through basic standard ways like simply speaking. Since, this study recognises the essential role of knowledge during a decision making process, it is important to examine how different individuals with different tacit and explicit knowledge respond to several situations at a school environment.

The research questions are formed as follows:

How do educators and administrators in Hellenic public primary schools manage their knowledge towards a decision making process?

How do educators and administrators in Hellenic public primary schools perceive Information & Communication Technologies and the idea of using it as a tool that could facilitate their decision making process?

1.4 SIGNIFICANCE OF THE STUDY

The knowledge produced in an educational organisation is enormous in volume and importance. As the population grows, so do the demands for efficient management of this knowledge. In Hellenic public primary schools the integration of Information and Communication Technologies, as a means that can assist in the management of knowledge and consequently the decision making process, seems to be happening at very low paces. The aforementioned along with the lack of an adequate number of employees make the management of the schools’ knowledge volume a highly difficult task. The present study wishes to contribute positively in two aspects.

The first aspect involves the identification of the way teachers, directors and assistant directors use their tacit knowledge – accumulated from the years of experience – as well as their explicit knowledge – acquired from their academic and other studies – to make decisions on important issues.
The second aspect of the research is the anticipation to shed light on the way Information & Communication Technologies are perceived by the school personnel and their perspective on using ICTs as a tool that could facilitate the management of their knowledge and thus their decision making process.

1.5 SCOPE AND DELIMITATIONS

The basic area of investigation and study is the public schools of primary education in the city of Athens in Hellas. The number of students and teachers, the availability of the directors and/or assistant directors and the degree to which technology is used were the basic determinants in the selection of the school units. Efforts were made to broaden the research to as many schools as possible so as to have a better understanding of the situation and to come to the safest possible conclusions regarding the degree of Knowledge Management practices application and the extent of technological integration in those schools. However that was not totally possible as maximum cooperation was not achieved. From the first communication with one assistant director, willingness on her part to participate in the research was expressed, which was not the exact case with the director of the same school. As it was understood the main reason for being reluctant was the limited time and her mistrust regarding the usefulness of such a research.

As far as my presence at the school is concerned, it was difficult to conduct the interviews during schooling. I had to present an official written certificate of registration (see Appendix A) proving that I am a student at LNU University doing a research in primary schools.

In communication with several teachers from the same school, readiness to grant interviews was shown. Nevertheless, at first there was a request from them for the exclusion of a digital voice recorder; this initial difficulty was overcome as they finally agreed to the use of a recorder.

Another obstacle – delimitation of this study was the timing of the research as at the end of March and the beginning of April was the Easter holidays during which all schools remained closed for two consecutive weeks. At that time period most teachers and school directors were absent and therefore unavailable for interviews or other information such as the provision of specific official state documents, circulars, etc.

A threat that added difficulty to the research was the economic environment and the employment rate which differed substantially at the time of the
research as there was a newly appointed government which was anticipated to introduce many and radical changes in the educational system of the country. The possibility of certain people retiring or being fired during the investigation was present but finally avoided and consequently they were willing to offer much information depending of course on their time availability.

Finally, the research methods of extracting information were narrowed down as only one observation was accomplished. People were simply not willing to let me observe them while working. As I understand, mostly regarding teachers, the basic argument against my observation was the difficulty in explaining my presence in the classroom to the children and the, much harder, justification of it to the student's parents.

1.6 STRUCTURE OF THE THESIS

The present thesis is structured in the following way:

- **Introduction**: It includes the problem statement and justification, the aim of the study and the formulated research questions and is concluded with the importance, the scope and the delimitations of the research.

- **Literature review**: It offers a review of the literature which is relevant to the main subjects of Knowledge Management and Decision Making, definitions of the terms which are fundamental for the research and references to previous works which are of relevant subject with this thesis.

- **Methodology**: It provides an overview of the selected scientific methods. The philosophical background and the strategy of inquiry are presented followed by the data collection and analysis methods. The research setting is explained, ethical considerations are discussed and the research validation techniques are presented.

- **Empirical findings**: It presents the selected step-by-step process in the data analysis under the interpretivistic view as well as the empirical findings of the research.

- **Discussion**: It involves the discussion of the outcomes of the research with respect to the main themes of the study which are Knowledge
Management, Decision Making and Information & Communication Technologies.

- **Suggestions and future research**: It includes the proposal for the undertaking of certain actions as well as the need for further research regarding the relationship between people and technology.

- **Conclusions**: It provides the inferences of the research.

- **Reflections**: It presents the researcher’s resolutions regarding the process of writing a master’s thesis.
2. LITERATURE REVIEW

The second section of the study includes a review of the literature which is related to the main themes of Knowledge Management, Decision Making Theories and Information & Communication Technologies, definitions of the terms ‘tacit knowing’, ‘explicit knowledge’ which are of fundamental significance for the study and references to other authors’ previous works which of relevance to this thesis.

2.1 KNOWLEDGE

As it has been discussed among several scientists, philosophers and scholars, knowledge cannot easily be described and be assigned with only one specific definition (Hitchen & Titchen, 1995; Dalkir, 2011; Newell, 2009; Jashapara, 2011). It has especially contradicting characteristics such as objectivity and subjectivity, truth and falseness which account for the difficulty in capturing and transferring it (Newell, 2009). The management of knowledge therefore is a task which, although complex, is intriguing and challenging. This is why people from diverse scientific fields have engaged themselves in the formation of theories in order to offer guidance to such a complicated endeavour. During the journey of analysis two major notions have emerged regarding the nature of knowledge: tacit and explicit.

These two concepts are further explained and analysed in the following sections as they play a crucial role for the understanding of the current situation in the Hellenic public schools of primary education regarding the way the teachers and the school directors manage their relevant knowledge. Additionally, these concepts also help us comprehend the way in which the decision makers (school personnel) use this knowledge during the decision making process.

2.1.1 Tacit Knowing According to Polanyi

Tacit is the state of knowing “more than we can tell” (Polanyi, 1966, p.4). It is simply what we know without being aware of knowing it. Polanyi doesn’t actually acknowledge the idea of two dimensions of knowledge and uses the term “knowing” rather than “knowledge”; he suggests that knowing is an art and therefore perception has a distinctive role in the process. Although he accepts the fact that the deconstruction of a whole and the detailed attention to the parts may help to establish a more accurate meaning of them he also points strongly to the fact that “…an explicit integration cannot replace its tacit counterpart.” (Polanyi, 1966, p. 20). In other words
we always operate in a tacit mode as, knowing what the parts of an idea are doesn’t mean that we are skilful at knowing how to use those parts effectively. This notion is one of this study’s basic elements as teachers and school directors often function based on their tacit thinking mode, using parts from their professional experience but without being able to explicitly justify their choices. This, among other issues, is crucial for what the present thesis wishes to explore.

2.1.2 Tacit and Explicit Knowledge According to Other Authors

There are other authors who support the dual nature of knowledge and acknowledge two dimensions: the tacit and the explicit. They use the word ‘knowledge’ for both forms and one such example is Rosenberg (1982) who defines tacit knowledge as “the knowledge of techniques, methods and designs that work in certain ways and with certain consequences, even when one cannot explain exactly why” (Rosenberg, 1982, p. 143, cited in Alwis et. al, 2004, p. 4).

In a more concise description offered by Dalkir (2011), explicit is the knowledge that can be absolutely expressed, put into words and easily transmitted.

There are certainly more than enough definitions of knowledge that have emerged according to different philosophical views and contexts within which each author has developed his / her thoughts. One such definition is also presented by Davenport and Prusak (1998, p. 5) who describe knowledge as

“a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, process, practices, and norms”.

The term ‘organizations’ is not restricted, of course, only to business but also includes the educational ones. The personal experiences and values of the educational personnel, which are recorded and analyzed further down, meet the processes and practices of the school so as to form the adequate framework which is suitable for each educational level.

This thesis tries to explore this meeting point and investigate how they both work in the educational environment.
The importance of the theoretical base, regarding the duality of knowledge – tacit and explicit - mentioned earlier is seen in one more definition indicated by Newell et al. (2009, p. 3) who say that

“Knowledge, according to the epistemology of possession, is seen as a personal property of the individual knower who is able to confer meaning on data and information by drawing from his or her own subjective experiences, perceptions and previous understandings”.

On another perspective, knowledge is presented as the outcome of an internal and personalized process which is based on the background of each individual teacher and school director and his / her ability to combine it with the newly acquired information through personal experiences. The individual perceptions of the educational personnel regarding the way a decision should be made play a significant role as they are the ones who actually make the necessary decisions in the schools and that is why, in this study, they are explored with respect to each person’s professional experience and personal judgement.

2.2 KNOWLEDGE MANAGEMENT

Based on the aforementioned distinction, between tacit and explicit knowledge, scientists, philosophers and academics have formed certain ways in which we can ‘pass’ from one state to another. One such way is the SECI model of knowledge conversion suggested by Nonaka & Takeuchi (1995, p. 62). The model is generated based on the assumption that the two different states of knowledge, tacit and explicit, continuously interact with each other. The four modes of the conversion are:

<table>
<thead>
<tr>
<th>Tacit knowledge</th>
<th>To</th>
<th>Explicit knowledge</th>
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<tr>
<td>Tacit knowledge</td>
<td></td>
<td>Explicit knowledge</td>
</tr>
<tr>
<td>From</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socialization</td>
<td></td>
<td>Externalization</td>
</tr>
<tr>
<td>Internalization</td>
<td></td>
<td>Combination</td>
</tr>
</tbody>
</table>

Table 1. Four modes of knowledge conversion (adapted from Nonaka & Takeuchi, 1995)
a) From tacit to tacit: Socialization – the sharing of experiences

Tacit knowledge can be transferred from one person to another in the tacit form that it exists without the use of any linguistic formation – that is language. The central element in this process is personal experience. The sharing of experiences between individuals is the most effective way of manifesting one person’s ideas and thoughts to another person’s thinking manner (Nonaka & Taceuchi, 1995, p. 63).

b) From tacit to explicit: Externalization – the articulation of distinct concepts

During this mode, concepts are created and a process of a dialogue or collective reflection initiates the conceptualization of images. Tacit knowledge becomes explicit through the formation of metaphors, analogies, concepts, hypotheses or models (Nonaka & Taceuchi, 1995, p. 64).

c) From explicit to explicit: Combination – the organization of concepts into a system

This mode entails the combination of different units of explicit knowledge. There is an exchange and association of knowledge items via several means such as documents, meetings, distance conversations (i.e. telephone calls) or electronic communications (i.e. e-mails) (Nonaka & Taceuchi, 1995, p. 67).

d) From explicit to tacit: Internalization – the incorporation of explicit knowledge

This last mode involves the internalization of explicit knowledge and its embodiment into tacit knowledge. It is closely connected to the actual application of the acquired knowledge – “learning by doing” (Nonaka & Taceuchi, 1995, p. 69). Experiences then become common intellectual models and thus important personal acquisitions.

Although this model is linear in nature and it is uncertain whether one can ‘skip’ a step and proceed directly to the following without missing the links, it offers a pretty concise and clear methodological tool for the management of knowledge.

This relation of Knowledge Management, and especially the SECI Model, with the school reality is further analyzed and explained in a separate sub chapter (2.2.1).
Slightly different, than the SECI Model in the phases, but of similar foundation, is the knowledge management cycle suggested by Dalkir (2011):

![Knowledge Management Cycle](image)

**Figure 1. An integrated KM cycle (adapted from Dalkir, 2011)**

In this case, when talking of KM being used by an educational organization, it is in relation to the enhancement of the decision making process. The application of knowledge management practices present people with opportunities to use their potential, organize their efforts, use available informational sources and promote improvement (Petrides & Nodine, 2003, p.31)

Even though, KM is a practice that has been associated with higher levels in the educational scale, such as universities, for which it constitutes an important guarantee of their sustainable development (Zhang et. al., 2008), it can also be linked to the operation of lower educational levels, such as primary schools.

The sustainable development of an educational organization is very well and succinctly described with the acronym “LIFE” suggested by Weenen (2000), where:

**L** stands for the limits we should have on the way we influence the environment and other living organizations,

**I** stands for the interdependence of humans with their natural environment,
F stands for the fundamentals over the principles we should have regarding the use of renewable energy sources towards the rendering of better services and

E stands for equity among all human beings (Weenen, 2000).

What Weenen suggests is that a school unit can remain true to the abovementioned set of elements and create a sustainable educational environment for the children, by managing the knowledge it produces and handles. Teachers and school directors can inspire their students and teach them respect for the natural environment as well as for their fellow students and thus contribute to the creation of a harmonious school atmosphere with a set operational mode and less requirements for the making of difficult decisions. Through this thesis, therefore, it becomes understood, that the management of knowledge at both levels, individual and collective, is crucial for the smooth operation of a school unit.

However, knowledge transfer is a multidimensional issue and some argue that there are reasons like difficulty, uncertainty, dynamism, context-dependency, etc. why “... some knowledge may not readily lend itself to capture and codification” (Newell et al., 2009, p. 154) and therefore the management of knowledge becomes a difficult endeavor.

2.2.1 **The SECI Model in the Educational Environment**

As it was mentioned above, the Nonaka & Taceuchi SECI Model (1995) has a significant role in this study.

On the one hand and in relation to the present thesis, the four phases of the SECI model, which were described earlier, actually depict the mode in which the knowledge extraction and organisation will take place during this study and the way in which the participants' tacit knowledge becomes explicit to the readers.

On the other hand, the phases of the SECI Model are related directly to the procedures of KM in a school environment. This relation is clearly and thoroughly described by Lee et al. (2010, pp.12-13). They suggest a KM process model for schools with the following structure:
Table 2. Procedures of the knowledge management process model for schools (Adapted from Lee, 2010 and modified)

<table>
<thead>
<tr>
<th>Knowledge Management Process Model (KMPM)</th>
<th>Socialization – Externalization – Combination – Internalization (SECI)</th>
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<tbody>
<tr>
<td>Knowledge generation &amp; acquisition</td>
<td>Externalization of Knowledge</td>
</tr>
<tr>
<td>Sharing &amp; communication of Knowledge</td>
<td>Internalization of Knowledge</td>
</tr>
<tr>
<td>Application &amp; evaluation of Knowledge</td>
<td>Socialization of Knowledge</td>
</tr>
<tr>
<td>Knowledge compilation &amp; feedback</td>
<td>Combination of Knowledge</td>
</tr>
<tr>
<td></td>
<td>Combinations of Knowledge</td>
</tr>
</tbody>
</table>

2.2.2 Knowledge Management in the Educational Environment

KM is not a new or innovative concept; it is frequently used in the business world. However, within the field of education it falls into a slightly different context. According to Barron (2000), KM is the organized identification, management and dissemination of an organization’s informational property from the ‘hardware’ which may be the databases and/or corporate documents, to the ‘software’, which are the policies, the procedures, and, of course, the untold experiences of individual employees.

In the present thesis, it is established that both the hardware and the software are equally important in the decision making process, more or less being the two sides of the same coin. School directors, assistant directors and teachers are obligated to comply with certain policies, (see Appendix D), and follow the procedures – which are considered to be the hardware – set by each school unit and, in a larger scale, by the Ministry of Education and therefore try to align their decisions within that context.

Moreover, their professional experiences – considered as the software - which often play a key role to the decision-making process that they follow, are not registered anywhere but in their minds. Therefore, organizing and managing the professional knowledge of the educators and the schools’ directors and assistant directors can become the starting point towards the improvement of their decision making process.

In certain cases, the management of knowledge is oriented according to the organization’s strategic vision and therefore acquires an enriched context. KM
is then, considered as the administration of all the processes that are connected to the creation, the dissemination and the assessment of knowledge towards its efficient exploitation in relation to the established goals of the organization (Lytras et al., 2002).

The research for the present thesis was conducted within the Hellenic (Greek) educational reality and involved the investigation of the current situation regarding the management of knowledge, the decision making process and the ICTs in the Hellenic public schools of primary education. Therefore, the literature review began from Hellenic sources but was not limited to them since the subject of this thesis is within an international context.

The review upon the related literature showed that KM is mostly connected with higher educational institutions (Cranfield & Taylor, 2008; Chaston, 2012; Zhang & Han, 2008; McNeil, 2011); this is not surprising considering the informational needs of a university. According to Nurluoz & Birol (2011) “Knowledge management is crucial in higher education practices that refer knowledge sharing, feedback and communication process as part of the quality improvements”.

However, since the “business of education is knowledge” (Sallis and Jones, 2012, p. xiv) and the educational process starts fundamentally from the primary schools, this thesis shows that one can easily be driven to the conclusion that there is no reason why KM cannot be applied at any school unit (i.e. of primary education) as well as help to establish an easier path towards the decision making process.

Moreover, according to Rolland (2004, p. 20) “Knowledge Management is generally viewed as a systematic process for creating, acquiring, disseminating, leveraging and using knowledge to retain competitive advantage and to achieve organizational objectives”.

If we are to correlate this definition with the area of a school unit, the teachers, the directors and the assistant directors create, acquire and disseminate knowledge through their daily interaction with each other as well as with the students during the lessons and the extracurricular activities.

Moreover, they can leverage knowledge and use it for the advantage of their institution by sharing their experiences with their peers and by using the experiences of others to build upon their own courses of actions and responses to problematic situations that require the making of adequate decisions.

The aim of the present thesis is not to propose a KM plan but rather a forerunner or a preface to that, which is explained and analyzed more in the ‘Suggestions and Future Research’ chapter towards the end of the thesis.
2.2.3 Knowledge Management in Schools of Primary Education

The management of the knowledge, which is generated in a school environment, has both an individual character, as it starts from the administration of knowledge that each person produces, by that very person and it reaches the collective plane. A study in 10 primary schools in the central city of the Adiyaman province in south-central Turkey revealed that the levels of knowledge that is produced and used by the teachers have an impact on the operational and transactional standards of the schools. Additionally it was concluded that the awareness of the teachers regarding school knowledge management is of fundamental importance for the accomplishments of the goals that are set by the school. (Uğurlu, 2013).

A long research in an Ontario school district showed that school directors acknowledge the role of Knowledge Management in their primary schools and have began to encourage the teachers of their school units to create and document the knowledge that is produced through their experiences, by relating the environment of an educational organization to the one of a business and by setting certain organizational goals. The research concluded that primary schools in Canada are in definite need of KM practices in order to become more effective (Hannay, 2009).

Another study conducted in Malaysia, regarding the knowledge creation practices of teachers in the Malaysian main educational stream, among other results also showed that one of Knowledge Management’s key attributes, which is knowledge sharing (Dalkir, 2011), is considered by the teachers as an important method for managing knowledge in a school environment (Tahir et al., 2013).

Furthermore, the Deputy Head of a primary school in the city of Haslemere in Surrey of England suggests that the sharing of information among teachers in schools of primary education is a crucial element for organizational success and facilitates the decision making process upon which the development of a learning organization depends (Berry, 2006).

The results of another study in 10 primary schools in Hong-Kong indicated that the teachers were inclined to agree that the application of Knowledge Management practices in primary schools may improve, among other elements, strategic planning and the educator’s teaching abilities. They also
suggested that KM, with the support of technological infrastructure can enhance the schools’ strategic planning capacity (Cheng, 2015).

2.3 DECISION MAKING

As mentioned above, digital technologies are designed and implemented in order for us to increase efficiency and reduce costs, time and physical effort. We also employ technology on a daily to resolve problems and to help us make decisions, although this is not the only instrument we use. During a decision making process many factors, such as personality, feelings, memories, experiences, etc., play an important role. The way one uses one’s knowledge depends on the decision one is called to make (Brown, 2012). And it seems that the two concepts of knowledge and decision making are indisputably linked since “the function of knowledge in the decision making process is to determine which consequences follow upon which of the alternative strategies” (Simon, 1947, p. 78). In other words managing one’s knowledge, tacit and explicit, increases the possibilities to a successful decision making process.

The complexity of decision-making has lead to the immergence of several theories, which vary according to their nature, the environmental circumstances, within which a decision is made, as well as the order in which our thoughts take place. Two fundamental perspectives are detected in the theories that study decisions: normative and descriptive, with the difference being very clear. The normative perspective illustrates the choices of individuals who are acting in a logical manner during the performance of tasks which require decision-making and, with the use of statistical tools, and foresees their responses using the available information regarding each alternative. The descriptive perspective points out the way that individuals actually make decisions; meaning it focuses on the individuals’ psychological profile and the environmental elements that affect their opinions and decisions (Sanz de Acedo, 2007).

In other words normative theory examines the way we people should make decisions while descriptive theory assesses the way decisions are actually made.

The circumstances, analyzed for our purposes in the present research, are situations of uncertainty. Simon (1996) introduces the term “great uncertainty” which includes four components:
1) “the identity of the options is not well determined (uncertainty of demarcation);
2) the consequences of at least some option are unknown (uncertainty of consequences);
3) it is not clear whether information obtained from others, such as experts, can be relied on (uncertainty of reliance); and
4) the values relevant for the decision are not determined with sufficient precision (uncertainty of values)” (p. 369).

When we talk of decision making problems under uncertainty we refer to those for which alternative ways of acting are observed as well as natural situations (uncertain eventualities with unknown, at least at first, possibilities of appearance) are mutually excluded (Kevork, 1993).
In the educational environment this definition finds its application on the decision making process conducted by school directors, assistant directors and teachers. In the event of a problem where the educator needs to make a difficult decision there may be more than one suitable courses of action, affected by the order of one’s thoughts, from which to choose. Moreover, there is always the possibility of unforeseen contingencies and factors, such as time restrictions or children’s reactions (as uncertainty of consequences) which may appear in an indefinite number of times. Therefore, an educator or a school director may need to examine all these elements before reaching to a conclusion – decision.

When referring to the order of thoughts we mean the phases one goes through before reaching a decision. Two are the basic categories: modern sequential models and non-sequential models. Among the many supporters of sequential models, Dewey (1978) and Brim et al. (1962) have proposed the division of the decision making process into specific steps.

Brim et al. (1962) proposed a process that

“consists of six phases customarily linked into a sequel:
1) identification of the problem;
2) obtaining necessary information;
3) production of possible solutions;
4) evaluation of such solutions;
5) selection of a strategy for performance and
6) actual performance of an action or actions, and subsequent learning and revision.” (p. 9)

John Dewey (1978) suggested a five consecutive step problem-solving process:
1) “a felt difficulty,
2) the definition of the character of that difficulty,
3) suggestion of possible solutions,
4) evaluation of the suggestion and
5) further observation and experiment leading to acceptance or rejection of the suggestion” (Kalogeras, 2013, p. 63)

These sequential actions seem to be crucial for the people (teachers and school directors) who face difficult situations at a school setting. On one hand, this list can explain the way some educators make their decisions based on their tacit knowing of processes. One the other hand, and for those who are not good at making decisions and may lack the required experience, these steps can be used as a guide to lead them in their decision making process.

Herbert Simon (1977) proposed another three phase’s scheme which was more appropriate at a collective level for the decision making process employed by organisations:

1. “identify all the possible alternatives;
2. determine all the possible consequences of these alternatives;
3. evaluate all the possible consequences” (Pomerol and Adam, 2004, p. 649)

The use of decision making theories, which attempt to explain how decisions are made in an uncertain environment with unknown variables, helps us understand how the different parties of the schools’ life think and act in certain occasions given the fact that there is no specific ‘instruction manual’. Even though different approaches exist, their common basis allows for their use interchangeably according to the type of the decision that must be made, which is the process that was selected for the present thesis.

The investigation of the current situation in Hellenic public primary schools coincides with the review of the relevant literature regarding the allocation of duties and consequently the responsibility for decision making in a school unit.

Another important issue raised and analysed regarding the decision making process in schools is the teacher participation. As it seems the engagement of the teachers, and not only the school directors, in decisions plays a significant
role in the outcome of the decisions (Hoy & Tarter, 2007). Two important factors are connected with the whole decision making process: personal interest and expertise. The decisions of the teachers and the school directors are influenced by:

- the level of personal involvement – to what extent is the issue in question of interest to the decision maker?
- the level of his / her experience – is he /she qualified enough to make that decision?

Moreover, and mostly in the educational context, the decision maker is not the only factor in a decision making process. The available data is a key component for a successful decision and as Knapp et al. (2006) comment, data-informed decision making regards the collection and analysis of data towards a decision which will lead to the improvement of a situation.

However, just the existence of raw data is not enough to lead the teachers to the suitable decisions. These data must also be supported by the proper ‘equipment’ (i.e. technological infrastructure), circumstances and the human element. More specifically, the “effective data-informed decision making requires not only access to useful data but also well-designed supports such as leadership to model data use and supported time for reflection on data” (Means et al., 2009, p. x).

2.4 THE RELATION BETWEEN KNOWLEDGE MANAGEMENT, DECISION MAKING AND INFORMATION & COMMUNICATION TECHNOLOGIES

As it has been established, KM is regarded differently by several scientists as it is a complex endeavor with many stages. However diverse these theories may be though, it is obvious that KM has one main goal: the effective decision making process. More specifically, KM is a series of actions which create and administer knowledge so as to help individuals and organizations to successfully make decisions with the aim of achieving the goals set by the organizations (Townley, 2001).

Decision making is a process that occurs not only at the individual level but at the collective one as well. However, these dimensions are often entangled as people in high positions “...commonly treat their professional decisions as private decisions with institutional consequences...” (Brown, 2012, p. 207).
Nevertheless, no matter what the path chosen is, the proper decisions are the ultimate goal. Since proper decisions can occur through the proper KM, the leveraging of KM must be the intermediate goal. Such advantage may be achieved through the “...synergic combination of capacities of information technologies...” (Markus, 2001 cited in Eris, 2012).

One of KM’s main characteristics is knowledge transfer; and that takes place through various mechanisms, one of which is communication (Stasser et al., 2000). In the case of the Hellenic primary schools communication concerns again, both levels: the individual and the collective one. It can occur among teachers, school directors and assistant directors through the exchange of personal opinions and experiences. However, it can also occur between groups of people coming from different school units. This larger scale communication brings school communities closer and shows that “...interconnected organizations have a larger experience base from which to learn than independent organizations.” (Argote et al., 2000, p.4).

Schools of any level, like any other organization, constantly produce new knowledge and thus are always in need of effective knowledge management processes, not only so that all this knowledge is not lost but also in order for them to have the proper grounds for decision making and therefore have a viable future (Chu, 2011). It is without doubt that KM can promote the establishment of a prosperous operational environment that provides people with the opportunities to gain the information they need at the proper time and disseminate it for the possible benefit of others and thus facilitate informed decision making processes (Chu, 2011).

Finally and in associating Knowledge Management and Decision Making with technology, it is understood that the ICTs offer numerous opportunities for communication and constitute the channel through which people, professional groups (and school units) can enrich their knowledge by gaining access to the established experiential knowledge of their peers (Petrides & Nodine, 2003).

Concluding, it becomes clear that knowledge management, decision making and technology are interlinked, as the first leads to the second and these two are assisted and progressed by the use of the third.

Thus, the review of the abovementioned theories helps this study in exploring how the school personnel manage their knowledge and how they make decisions within the school environment.
It also aims at investigating what the personnel in Hellenic public primary schools believe about KM practices and the concept of ICTs within the school life.
3. METHODOLOGY

The present chapter offers an overview of the selected scientific methods. The philosophical background and the strategy of inquiry are presented followed by the selected methods of data collection and analysis. It also includes the presentation of the research setting, the ethical issues that were taken under consideration as well as the techniques that were used to provide validation of the research.

3.1 PHILOSOPHICAL BACKGROUND OF THE RESEARCH

Before conducting an actual research there are many factors one must consider. One of these factors is the philosophical approach which the researcher will choose to follow. The abundance of theories regarding the philosophical worldviews along with the potential overlapping between them in certain notions makes the selection very difficult. Therefore, the choice of philosophical background in the present study, came as a post-research logical assumption and relatively late in the theory formulation process, since there were almost no prior ideas or hypotheses that needed verification but rather my attempt to explain the phenomena as they were, which lead to the choice of interpretivism (Gioia & Pitre, 1990).

3.1.1 INTERPRETIVISM IN INFORMATION SYSTEMS

The chosen approach for the present study is interpretivism. The basis of this approach is the understanding and interpretation of reality through a personal view and the comprehension of people’s actions and the reasons which have lead to them. “The interpretivist paradigm seeks to understand reality through the realm of individual consciousness and subjectivity” (Jashapara, 2011, p. 44).

Interpretivism suggests that reality, reality actors and reality awareness are three interrelated and interdependent factors which cannot be examined separately. Therefore interpretive research assumes ”... that our knowledge of reality is gained only through social constructions such as language, consciousness, shared meanings, documents, tools, and other artefacts.” (Klein & Myers, 1999, p. 69).

The interpretive approach ultimately points to the acceptance of the unbreakable interdependence between reality and individuals.
“Interpretivism asserts that reality, as well as our knowledge thereof, are social products and hence incapable of being understood independent of the social actors ... that construct and make sense of that reality” (Orlikowski & Baroudi, 1991, p. 13).

Moreover

“The aim of all interpretive research is to understand how members of a social group through their participation in social processes, enact their particular realities and endow them with meaning, and to show how these meanings, beliefs and intentions of the members help to constitute their social action” (Orlikowski & Baroudi, 1991, p. 13).

In other words it was chosen because it can assist us in understanding what the directors, the assistant directors and the teachers think and how they make their decisions upon important issues. Social actions and circumstances can be examined and comprehended through interpretivism not only in order to analyse the gathered research data but also in order to explain social phenomena as they occur in a school environment.

During the investigation for the selection of the suitable research approach for the present thesis, another variable, of its own importance, came to surface and that was ‘values’ and their role in an IS research. According to Howcroft and Trauth (2005) interpretivists “...believe that values and beliefs are always involved with the productions of ‘facts’. Interpretive researchers specifically consider all values to be equally important, that is, no set of values is considered better or worse” (p. 25).

Furthermore, selecting an interpretive lens to examine the decision making theories presented earlier, is suitable for the completion of this study’s general theoretical framework as it suggests the collection of the necessary information about an action towards the possible conclusion taking into account the preference and attitudes which lead to such an action. Since

“interpretive work traditionally seeks to promote insight and understanding regarding the mental processes that are driving observed patterns in social behaviour” (Chai, 2005),

it appears to be the appropriate philosophical filter through which the selected, participants’ thoughts can be examined.
Regarding research in Information Systems Walsham (2006) gives emphasis on individuality and personal perception of reality. He argues that

“...[the] interpretive methods of research start from the position that our knowledge of reality, including the domain of human action, is a social construction by human actors. Our theories concerning reality are ways of making sense of the world, and shared meanings are a form of intersubjectivity rather than objectivity” (p. 320).

3.2 TYPE OF RESEARCH

The interpretive type of research, which was chosen for this thesis, is used to discover and/or uncover what truly exists as events naturally occur, by employing three main methods: observation of activities and conversations, description, and interviews, and documentation (Polit & Hungler, 1999).

Moreover, doing an interpretive research entails the actual involvement of the researcher. As Walsham (2006, p.321) puts it “the setting up and carrying out of fieldwork is the fundamental basis of any interpretive study”. The level of the researchers’ involvement and interaction with the group participating in the research can be decided according to the level of access that may be gained and the time frame of the research. The main tools which were used were: interviews, stories / narratives, one observation and document collection from any available source.
3.3 RESEARCH SETTING

3.3.1 HELLENIC EDUCATIONAL SYSTEM (HES) – PRIMARY SCHOOLS

Figure 2. Hellenic Educational System (HES) (translation from of the original chart by the Centre for Consultation and Orientation of Florina)

Education is an informational system with various forms in different places of the world. Since the present research focuses on Hellenic public school of primary education in the city of Athens, the above figure was selected as a concise manner to present the HES without going into further details just so that we can have a basic understanding of its structure; it may differ from the educational systems in other countries.

As seen in Figure 2 the HES includes 8 main phases. The first 3 – kindergarten, primary school and gymnasium – stages are mandatory. The Hellenic school of primary education accepts children from the age of 5 until 11. The educational programme is divided in 6 classes / grades.

Thus the final research setting was formed as follows:
6 Interviews were conducted with people from three different primary schools in three different municipalities at the southern suburbs in the capital city of Athens and gathering of relevant documents (i.e. laws, presidential acts, etc.).
3.3.2 RESEARCH PARTICIPANTS

The schools were selected based on friendly acquaintances. That is to say that I contacted people that I knew were involved in one way or another in the educational system or knew that they had friends who worked as teachers. Nevertheless the final sample is considered to be random since the people who actually participated in the research were completely strangers to me. This approach was followed after an unsuccessful attempt to contact primary school units nearby my residence by e-mails or telephone communication.

Having in view the way knowledge is managed and decisions are made, the schools’ educational and administrative personnel was selected as they are the ones who actually make decisions. Whether on a narrow scale – as one teacher needs to make decisions that concern only his / her classroom – or on a broader scale – as the school Director is required to decide upon a wide number of issues (i.e. teachers, students, school buildings and necessities, safety, etc.) – these are the people who can provide reliable information about the school reality.

The following table shows basic information about the people who took part in the research (interviewees).

<table>
<thead>
<tr>
<th>Position</th>
<th>Years of experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Foreign (other than Hellenic) Language Teacher</td>
<td>22 in the public sector</td>
</tr>
<tr>
<td></td>
<td>7 in the private sector</td>
</tr>
<tr>
<td>2. Assistant Director</td>
<td>34 in the public sector</td>
</tr>
<tr>
<td>3. Assistant Director</td>
<td>22 in the public sector</td>
</tr>
<tr>
<td>4. Full time Teacher</td>
<td>15 in the public sector</td>
</tr>
<tr>
<td>5. Director</td>
<td>28 in the public sector</td>
</tr>
<tr>
<td>6. Full time Teacher</td>
<td>7 in the public sector</td>
</tr>
</tbody>
</table>

Two of the interviewees were full time Teachers, one part time Teacher, two were Assistant Directors and one was a school Director. It should also be
noted that besides having administrative duties the Assistant Directors and the Director are also Teachers but with less educational hours in their daily work schedule due to their other tasks.

### 3.4 DATA COLLECTION METHODS

The methods for collecting the data were four:

a) Interviews of semi-structured type with school directors, assistant directors and teachers
b) Stories / narratives
c) Observation of one participant at her place of work
d) Documentation with the collection of relative formal state documents, i.e. circulars, guidelines, etc. and information retrieved from internet informational and communicational locations.

All forms of data collection were conducted at the same time so as to facilitate a comprehensive analysis and the assessment of processes as well as the outcomes.

Moreover, in order to strengthen the qualitative validity a researcher needs to examine the accuracy of the findings. The use of some of Shenton’s (2004) suggested strategies (presented in more detail in the Validity and Reliability chapter) for validating the accuracy of the research results offered the requested reliability regarding the study’s findings.

The following sub-chapters offer a justification for the selection of each data collection method separately.

#### 3.4.1 SEMI-STRUCTURED INTERVIEWS

The type of interviews which was chosen for this study was the semi-structured ones as they are best suited for encapsulating tacit knowledge on the individual level (Blandford, 2013).

A standard semi-structured interview guide includes a list of questions or certain topics that must be covered during the interview. However, there is also flexibility in the way and the order in which the questions can be asked (Edwards and Holland, 2013).
The reason for selecting semi-structured interviews is the interpretive approach by which this research is conducted. “The main goal of the interpretivist is to understand the meaning of the social situation from the point of view of those who live it” (Radwan, 2009, p. 11).

Moreover, by using the semi-structured type of interviews, the intention of the researcher is not to test a predefined hypothesis but rather he/she aims at investigating, as openly and as in depth as possible, a topic of concern (Smith and Osborn, 2003).

Undoubtedly, the most suitable type of questions was the open-ended one as the interviewees were able to feel free to express their opinions, their arguments and, as the interview time passed, become looser and provide more detailed responses (Oppenheim, 1966, cited in Dalkir, 2011, p. 105).

The interviews were carried out between the end of March 2015 and almost the end of April 2015. They were held at two primary schools, two cafés close to two of the schools and at the researcher’s house. The interviews lasted between 30 minutes and 2 hours and they were audio recorded after the written permission of the participants. The interview guide which was used included 19 questions, (see Appendix C), relating to Knowledge Management (KM), Decision Making (DM) and Information & Communication Technologies ICTs that were produced based on the original research questions. Thus the interview guide included:

2 introductory (ice breaking) questions
2 general – indirectly connected with other categories
4 KM related
7 DM related
4 ICTs related

Even thought the interview guide presented in Appendix C includes numbered questions, during the interview process, the order of the questions was not followed exactly, so as to adjust more to the interviewees’ mood and also in order not to interrupt his / her train of thoughts.

The interviews were recorded in two ways: by using a standard digital voice recorder and by hand notes taking. Note taking by hand was selected for two reasons. The first one is rather practical and involves the possibility of the digital recorder malfunctioning during the interview. The second is for verification purposes and is explained further down at the analysis section of this thesis.
3.4.2 STORIES / NARRATIVES

Although stories / narratives were included in the set of interview questions, they are regarded as a separate research technique and were conducted after a short break from the interview process.

Stories / narratives are a complete way of conveying one’s message and making an impression to the listener’s ears. Furthermore, “... stories remain an excellent vehicle for capturing, coding and transmitting valuable tacit knowledge” (Dalkir, 2011, p. 107).

“Narrative is an interpretive approach in the social sciences involving storytelling methodology. The story becomes an object of study, focusing on how individuals or groups make sense of events and actions in their lives” (Mitchell and Egudo, 2003).

A narrative, as an interactive and interpretive method, is regarded as a story which includes a tentative order of events and the effort of the storyteller to explain or assign importance to those experiences in a personal but also culturally understood way (Sandelowski, 1991).

In the present study the participants were asked to recall up to three significant incidents through the years of their professional experience in which they had to make important decisions and they could retell it with details. Both methods, semi-structured interviews and stories / narratives, were used so as to complement one another. The interviews assisted the grouping process regarding the subjects of KM, DM and ICTs while the stories / narratives gave room for the emergence of other themes derived directly from the personal experiences of the participants. The presentation of the full text of each incident serves as a means to understand the reasoning behind each easy or difficult decision that the participants have had to make as well as for the reader of this study to have a more vivid picture of their real life experiences and therefore be able to draw their own conclusions.

3.4.2.1 STORYTELLING MODE

The process of storytelling was conducted in the same mode as the rest of the data collection methods.

After the interview with each participant was completed we took a short 5 minute break just chatting about various general subjects and then we continued with the narrations of the events. The process was audio recorded, after the relevant permission, while written notes were also taken. That note
taking involved mainly the occasional clarification questions from my part, in order to understand better the plot of the described incidents, and of course the answers to those questions.
The written notes also helped me during the transcription task so as to locate more easily the important points of their stories.
Since this research was conducted in Hellas and all participants were Hellenes the text was also translated from Hellenic into English by me, assisted by my working experience as a translator.

### 3.4.3 OBSERVATION

Observation is another method that is often used to extract tacit knowledge from experts. An expert is someone who has “special skill at a task or knowledge in a subject” and expertise is “special knowledge” (Oxford University Reference Dictionary, 1996, p. 439). Even if “…we cannot observe someone’s knowledge, we can observe and identify expertise” and furthermore “… recordings of informal and unrehearsed expert demonstrations form a permanent record of task knowledge” (Dalkir, 2011, p. 113).

Since interpretivism entails understanding the meaning that is hidden behind the behaviour of a group of people within the context of a social setting (Guest et al., 2013), observation was selected as a very useful data collection method. Moreover, conducting my observation at the natural setting of the person who participated in my research enabled me to put myself in the position of the observant and comprehend the reason behind her actions (Kawulich, 2005).

#### 3.4.3.1 OBSERVATION MODE

In the present thesis one observation process was given permission to be recorded. Even though it was not a pre-arranged observation, it cannot be considered as covert as the assistant director knew that I was present at the incident and the surrounding area of the school is a public space. In fact it was the assistant director herself who suggested that the relevant incident should be included in the present thesis.

The observation involved the reaction of the assistant director to an accident of a small child that took place exactly at the time we had completed our interview process.

Since this was not a scheduled observation process I had to follow the assistant director as she rushed out of her office to the scene of the accident. I mingled in the crowd that had gathered around trying to get as close to her as possible.
My attention was divided to many directions at the same time as, besides watching the assistant director as she attended to the child’s needs and generally handled the situation; I also listened to parents and students as they described the incident to each other. The commotion and thus my observation lasted for about 20 minutes during which I took field notes by hand on my notepad which I then transferred to this thesis.

### 3.4.4 State Documents

The gathered documents involved initially the relevant legislation on the basic structure of Hellenic public schools of primary education, mainly regarding the duties, the tasks and the responsibilities of the main bodies (i.e. school directors, assistant directors and teachers), any circulars regarding the operation of the schools and presidential and / or ministerial decrees regarding special educational issues (see Appendix D).

Before analyzing the way decisions are made in public schools of primary education it is imperative to examine first the legal framework governing the schools and especially the laws, articles and presidential decrees regarding the personnel who are responsible for making those decisions at all levels and positions.

The search for these state documents was directed by the logical assumption that since the research field is the Hellenic public schools of primary education there should be an official state / governmental framework under which these schools must operate.

Besides serving as the background information based on which the overall decision making framework is formulated, I found that this legislation review was not only useful but also imperative towards understanding the responsibilities of the Directors, the Assistant Directors and the Educators’ Boards (EB) (the total number of the Teachers working in school unit) and thus the type of decisions they are supposed to make during the execution of their duties, as it is analyzed further down. In this study the Hellenic legislation framework constitutes the ‘explicit’ knowledge which the educational and administrative staffs of the schools are presented with and which they need to manage before reaching a decision when the need occurs.
3.5 DATA ANALYSIS

Seeking the best way to analyse data can bring a lot of confusion to a researcher. Especially when he / she is aware of all the information he / she intends to convey to a meaningful text but gets tangled in a fuzzy world of data analysis methods. Furthermore, trying to remain true to the originally chosen theory that serves as the philosophical background of the research entails the difficult task of overcoming the occasional overlapping between different approaches and selecting the appropriate tools.

As it was mentioned earlier interpretivism has been employed for the analysis of the collected data. According to Tesch (1990, cited in Patterson & Williams, 2002) the interpretivistic approach focuses on developing an organizing system for the analysis of the gathered data. The aim of that system is to identify the prevailing ideas from the narrations during the interviews and the storytelling process – and let themes immerge and be categorised so as to lead to specific conclusions.

That very same aim of analysing a set of data by reducing their initial large volume and producing themes and categories is supported by the six step process offered by Lichtman (2013, pp. 252-255):

1. **Make an initial coding**
   An initial code may be a word or phrase produced by the researcher or the respondent and it is used as a summary idea of the participant’s responses.

2. **Revisit the initial coding**
   By examining more carefully the initial codes the aim is more or less to remove redundancies, rename synonyms and / or clarify certain terms.

3. **Make an initial listing of categories**
   Some of the modified codes may become categories or be grouped into categories on the grounds of belonging to the same major topic.

4. **Modify the initial list**
   The importance of some categories may be greater than others or a combination or two or more categories could immerge.

5. **Revisit the list of categories**
Depending on the researcher’s purpose some of the categories may seem more meaningful than others while critical issues can be identified.

6. **Move from categories to concepts / themes**
   This is the final formation of key concepts which are complete and powerful enough to reflect the meaning of the collected data.

More specifically the analysis of the gathered data began by looking carefully at the interview questions. As mentioned earlier two methods of recording were used: one was the digital audio recorder and the other was taking notes. Two were the reasons for taking notes: one, as stated before, was the possible failure of the digital equipment. The second was within the intention that, during my data analysis, after having transcribed the interviews, I could ‘compare’ the transcribed text with my notes.

The actual themes and categories are presented and analysed in the Empirical Findings chapter.

### 3.6 ETHICAL CONSIDERATIONS

The ethical considerations were focused mainly in two directions. The first involved the anonymity of the participants and the protection of their personal information. Due to the fact that the knowledge which was gathered derived from specific people, they were assured that their personal data would be protected. The whole study would be conducted under the same anonymity framework so as to provide a sense of freeness in their expression. Confidentiality was assured by a formal written letter – written consent form - (see Appendix B) which was presented to the participants before their involvement to the research.

Furthermore, in the written informed consent form which was presented to all the participants before the interview, there was a question about the use of a digital voice recorder. The reason for such a question is the fact that voice is one way in which the identity of a person can be defined. Thus, having explained that the use of a recorder not only contributes to time saving but also allows me to be more accurate during my data analysis, the participants gave me their consent to use a digital recorder.

Within that first direction there is also another ethical issue that a researcher should take under consideration before selecting observation as a data
collection method. That is whether the participants should be fully aware that they are participating in an observation or not. Even though the direct ethical answer to such a question is that full knowledge should always be offered, there is a primary distinction that allows for some flexibility in the matter. More specifically:

“In places that people perceive as public, such as a campus food court or a shopping mall, people do not expect privacy, and so it is generally acceptable to observe without participant consent. In places that people perceive as private, which can include a church, home, classroom, or even an intimate conversation at a restaurant, participant consent should be sought” (Driscoll, 2011, p. 160).

The second direction regards the ‘ownership’ of knowledge. There is the question of ‘what is the extent of knowledge capturing that we should seek for or allow’? There are supporters for both sides of the coin. Those who say that too much ‘encasing’ of knowledge can lead to the decrease of a person’s value, the enhancement of the idea that no one is irreplaceable and the loss of the “oneness of humanity and nature” (Nonaka & Tekeuchi, 1995, p. 27). On the other hand this is a process that empowers an organisation and adds leverage to its knowledge assets (Dalkir, 2011).

In the case in question such a distinction was hard to make. The knowledge of a primary school director is the result of his/her experiences as a director in that certain school. This process cannot be seen as removing the knowledge from the knower nor as promoting a false dichotomy between the individual and the organisation (Nonaka & Takeuchi, 1995). The knower’s knowledge is offered for the benefit of one’s own work and consequently one’s colleagues.

Furthermore, when discussing about the position of directors, assistant directors and teachers at public schools we should keep in mind that the role of an educator has shifted over the years from being knowledge ‘owner’ to a “facilitator of knowledge acquisition and knowledge processing” (Chong, 2013). That means that their knowledge is party under the ‘ownership’ of the school in which they work as it has been formulated and acquired according to the circumstances encountered during their service and the execution of their responsibilities as the school’s personnel. Therefore the possibility of removal of a person from a school unit, whether it is voluntary, i.e. resignation or retirement, or involuntary, i.e. due to a dismissal, cannot become an obstacle which will prevent the preservation of this knowledge by the organisation (Lesser & Prusak, 2001), that is the school.
3.7 VALIDITY AND RELIABILITY OF THE STUDY

Even though the term ‘reliability’ has been used mostly in quantitative researches and although ‘validity’ may not be considered, by some, as applicable in qualitative research, both notions have been used in all types of research (Golafshani, 2003). It seems that whichever the chosen terms are, a study’s verification criteria are essentially dictated by the paradigm to which the study in question belongs (Lincoln, 2002) and thus different paradigms require specific measures for satisfying ‘rigor’ (in quantitative research) or ‘trustworthiness’ (in qualitative research) (Morse et al., 2002).

Trustworthiness, therefore, was accomplished in the present study by meeting the following four criteria:

- **Credibility** – the demonstration of the consistency between reality and what is presented.
- **Transferability** – the provision of elaborate data in order for the reader to familiarize him / herself with and become able to picture the research findings within a different setting
- **Dependability** – the demonstration that one study’s results or at least similar ones could be achieved should the research be repeated within the same context and by employing the same methods and participants
- **Confirmability** – the provision of evidence that the findings are free from the researcher’s presuppositions (Lincoln and Guba, 1985).

Out of the steps that Shenton (2004) suggests taking for establishing the accuracy of the recorded phenomena, the following were employed in this study:

Regarding **credibility**:

a) The adoption of research methods well established – the literature review shows that the research methodology used in the present thesis has been successfully utilised in similar previous works.

b) Random sampling – the participants in this study were selected randomly so as to prevent the event of any researcher’s bias interfere with the research results.

c) Triangulation – not only different data collection methods (interviews, stories / narratives, observation) were employed in this study but also official state documents were examined so as to offer supporting data.

d) Tactics to help ensure honesty in informants – the participants were asked to sign an informed consent form which contained all the...
necessary measurements regarding their participation in the research (detailed briefing regarding the subject of the thesis, anonymity, withdrawal option at any time during the research, etc.) (see Appendix B).

e) Peer scrutiny of the research project – the completed version of this thesis was presented to three peers of mine (two fellow students and one Master’s Degree holder) who reviewed the my work and examined it both presentation and content wise.

f) Thick description of the phenomenon under scrutiny – the present study tried to provide a detailed depiction of the subject under query, the relevant literature, the research setting and the employed research methodology.

g) Examination of previous research findings – past studies were reviewed so as to appraise the concurrence between their results and the results of the present thesis.

Regarding transferability:
In order to enhance the transferability of this research I have tried to provide elaborate information concerning the boundaries of this study by making clear reference to the following:

a) the number of schools participating in the research
b) the number of participants and their profiles
c) the data collection methods which were used
d) the number and the length of the data collection sessions
e) the time period over which the data collection took place.

Regarding dependability:
In my attempt to address satisfyingly the issue of dependability I have tried to provide as many details about the processes followed in this study and more specifically a description of the research design and its implementation.

Regarding confirmability:
In order to achieve confirmability of this study I have attempted to show that the findings of the work are based on the participants’ experiences and thoughts and not on my preferences by explaining the rationale behind the selected approaches and the adopted methods as well as the weaknesses or limitations of this study.
4. EMPIRICAL FINDINGS

This part of the thesis presents the selected step-by-step process in the data analysis using the interpretivist approach as well as the empirical findings of the research

The data collected from the interviews, the stories / narratives and the observation were assessed so as to produce categories of subjects; that is to say that during the processing of the data, gathered mainly from the interviews and the story telling process, certain issues were brought up and forth more than one time, which leads to the formation of content or subject categories. The analysis offered valuable information, which was also compared with the data extracted by the provided state documents. The material was analyzed in terms of, professional position and assigned responsibilities, level of contribution to the production of information and KM skills.

All the interviews and stories / narratives were audio recorded and afterwards transcribed into a simple Windows Word processing program after the interviewing process with all the participants had been completed. After listening to the recorded material once, in order to get a general idea of the content, I listened to it for a second time so as to conduct its transcription as well as to pinpoint the significant issues of relevance to this study’s research questions. The transcription of the interviews produced the descriptive text which was going to be analysed.

The points that came up were plenty, diverse and interesting. Therefore the use of Lichtman’s (2003) six step process served successfully the organisation and analysis of the gathered data, More specifically:

Step 1: During the first step of the analysis which was the formation of the initial coding, about 50 codes were produced, most of which were the respondents’ own words or phrases.

Step 2: In revisiting the initial codes I found out that some phrases were redundant or repeated two or three times and thus were removed.

Step 3: Moving on to the third step, I created an initial list of 10 categories by grouping some of the codes into major units and keeping the rest as subcategories. Those were: decisions, knowledge, technology, collaboration, communication, dialogue, preparation, hierarchy, problems and school administration.
Steps 4 & 5: In steps 4 (modifying the initial list) and 5 (revisiting the list of categories) I resulted that some of the categories could be combined or that one was embodied in the other.

Step 6: In the final step of the analysis (moving from categories to concepts / themes) I concluded to five themes, which seemed to reflect the major essences of the collected data, and were based on the subjects in which the interview questions were divided (Knowledge Management, Decision Making Theories and Information & Communication Technologies).

Therefore, by analysing the gathered data according to the analysis scheme suggested by Lichtman (2013) the following themes immerged:

- a) Knowledge awareness
- b) Decision making criteria
- c) Allocation of responsibilities
- d) Communication
- e) ICT dependency – deficiencies

These themes may include one or more issues depending on each participant’s position in the school (Director – Assistant Director – Teacher). At this point it should be noted that while all Directors and Assistant Directors are also and foremost Teachers not all Teachers are also Directors or Assistant Directors. This distinction allows us to understand how the different responsibilities of each position lead to a different framework regarding the decisions each person is permitted to make.

As the number of participants is specific and there is a possibility that they can be identified by the combination of their professional position and their place of work, their comments inserted in each issue are not related by name to the person who has produced them.

4.1 SEMI – STRUCTURED INTERVIEWS

Regarding the semi-structured interviews the analysis according to the abovementioned themes produced the following results:

- a) Theme: Knowledge awareness

ISSUE: They don’t know that they know – tacit knowledge
When asked if they knew about Knowledge Management (KM) – without clarifying whether this question referred to the scientific – theoretical field or just the way in which we organise our work, so as to elicit the first thought in the participants’ minds – (and if not could they imagine what it was) the participants’ prevailing answer was “No”. More specifically, some of the interviewees’ comments were:

“No, I don’t have any idea what this might be.”
“No but I would suppose it has something to do with administration issues.”
“I don’t have any knowledge over this issue but I would relate it only to the educational process.”
“I think it is related to legislation, the schools’ operation and good practices.”

Once again the notion of tacit knowledge is demonstrated as the participants offer their personal tacit understanding of the term. From the shared experiences it became more than obvious that they do ‘manage knowledge’. Even if we take as foundation the most simplistic definition of Knowledge Management, they all capture, process, develop, store, share, use and reuse bits of knowledge they have acquired over the years of professional experience (Groff & Jones, 2003).

In other words the teachers engage in conversations with students as well as with their colleagues, from which they gather new information, they process this new knowledge, they make decisions according to it, they store in their minds and they share their experiences with their peers and finally they reuse this knowledge when the necessity occurs.

**ISSUE: It is hard to break down to pieces automated daily actions**

When asked to describe a full working day at first they were having difficulty to actually recalling and giving details about their daily routine activities. They had to go forth and back from the whole (entire set of responsibilities) to the part so as to isolate each specific task and present them orderly, once more referring to Polanyi’s (1966) notion about the deconstruction of a whole and the detailed attention to the parts and how this is a process that helps us understand the accurate meaning of the parts without eliminating, however, the importance of the entire entity of one’s knowledge.

Regarding this matter one teacher said:

“It is not that easy for me because my work has become an automated process for me.”

**ISSUE: Everyone thinks that Knowledge Management is something more than it is**
When asked (as mentioned before) about the concept of Knowledge Management in the context of administration of an educational organization most of them assumed that it is something like a higher power. I gathered that the term sounded sonorous. The common element is that almost all of them tried to link it to the role or the knowledge of the Director or the Assistant Director.

Two interviewees responded in the following way:

“I suppose it has to do with the issues that the school director deals with.”

“It sounds like a specific procedure that the school director should know about.”

Most of the interviewees thought that KM is something that does not concern them but rather an issue that only the top in hierarchy school personnel – meaning the school directors and assistant directors – should occupy themselves with.

b) Theme: Decision making criteria

ISSUE: Even though there may be a rudimentary action protocol everything ultimately goes through personal assessment and judgment.

As it turns out state directives (see Appendix D) are useful only up to a certain point. When the educators or the Directors need to make a significant decision they turn to their colleagues from the same school, to colleagues from other collaborating schools, to old friends who work in the same field or even, (more rarely) to family members just to hear a fresh and unbiased opinion. The official guidelines prove to be insufficient to provide a frame within which they can move (Giannakopoulou, 2008).

One participant was very clear about his personal contribution and said:

“I don’t make any decisions besides arranging the schedule of the teachers who are ‘on duty’ in the schoolyard each day.”

From such response we gather that, even though there is a legislative framework that defines the responsibilities of the school personnel (see Appendix D) and thus the boundaries regarding the decisions they need to make, there are teachers who, based on their personal understanding and thinking mode, don’t respect the state regulations, as they don’t consider them restrictive. They adjust their attitude according to their personal perception of their role in the school environment.
**ISSUE: Personality and personal experiences are the driving force**

In the decision making process what comes to the surface is the individual’s personality. From the complete distancing from a problem and its transference to someone else, “*When a problem occurs in the technological equipment I don’t resolve it; I don’t know how and there is no time*”, to the deep involvement, in body and soul, “*I discuss with the director some suggested actions or I improvise*”, personal perception and professional experience play the most significant role. Assuming that these perceptions and experiences are part of one’s personal tacit knowledge, it would be destructive to disregard them in view of objectivity that dictates the elimination of all personal elements of knowledge (Polanyi, 1966).

c) **Theme: Allocation of responsibilities**

**ISSUE: Everything starts from the directors.**

The Directors of the schools and generally those who are in charge are considered to be the driving force of the whole educational unit (Kousoulos et al., 2004). One of the younger participants commented: “*I believe very much in the role of the school directors.*” Teachers turn to them when they are in need of inspiration, guidance, practical advice or even psychological support. When all others are in dead end the directors assume the role of a safety net and the last resort for a solution to a difficult problem.

d) **Theme: Communication**

**ISSUE: Collaboration between directors, assistant directors and teachers**

As in every organization a good environment with satisfactory working conditions must be present. The collaborative atmosphere between colleagues is an essential factor which allows them to function in a calm and composed manner thus creating a relaxing training environment for the children. Most interviewees were in favour of such a working environment and one clearly stated:
“I believe that good will and cooperation between teachers can save us from many problems.”
Furthermore the smooth communication between them enables the sharing of information contributing thus to the successful management of knowledge (Stasser et al., 2000).

e) Theme: ICT dependency – deficiencies

ISSUE: Technology saves time and is seen as a useful and necessary tool and not as an obstacle, however...

Even though the interviewees consider technology to be the most useful tool, they use it on a daily basis, not only at a professional but also at a personal level, and think of it as an inseparable part of their lives, when I mentioned the already existing internet sites and the relevant communicational tools, the opinions were about divided. Some mentioned not only that they are interested in keeping themselves informed on issues regarding the educational process and enriching their knowledge with new educational and administrative tools but also that they are willing to communicate at an individual and collective level and exchange opinions and ideas with people of the same professional field. One comment supporting this side was:

“I am very depended on computers, both in my work and my personal life.”

On the other hand there was the viewpoint that the wide (reaching the whole country) scope of application of these sites, the large volume of occasionally unfiltered information as well as the large amount of people who participate in them (forums, chat rooms, blogs, etc.) are restraining factors that cause hesitation for them to use them. One participant, although of a younger age than others, a factor which could assumingly play a role in favour of the use of technology, said:

“I don’t engage in conversations in web school communities. I am not negatively predisposed; I just don’t think that they are useful.”

The preference to applications of a smaller scale was expressed as they provide opportunities of people identification (“I want to know the person I am talking to”) and more direct communication options, thus adding to the perspective of social determinism that “...sees factors in society as creating specific uses of technology.” (Quan-Haase, 2013, p. 47).
4.2 STORIES - NARRATIVES

The participants were asked to describe up to three instances from their working experience so far in which they had to make an important decision and of which they could remember the step-by-step process. This process was included as one of the research methods with the aim to shed some light into the way decisions are made especially on instances with no prior occurrence. As it was discussed earlier, stories / narratives are a very useful method in transferring a message from one person to another in the most illustrative way. Thus it was chosen as a most effective tool towards answering the first research question of this study. This part of the thesis is structured as follows: The events presented come from different interviewees in random order. The passages are the word for word translation from Hellenic to English. After each story there is an analysis of the content and its significance for this study.

1. “A child had an accident in the courtyard. When we suspect that it involves a sprain, a twist or a fracture we transport the child to the principal’s office and we call the gym instructor, who is usually more competent to treat such accidents. If it is something simple we apply some ice or let the child rest. In this case the child had broken her arm, so I called the gym instructor who, with my assistance, offered first aid. We took a hard cardboard, placed the arm on it and tied it with a scarf so that it would remain still. Just a minute before we had called for an ambulance and after the first aid we called the child’s mother to come and escort her to the hospital. Afterwards we received congratulations for the way we had handled the case and hadn’t caused any further damage to the little girl’s arm.”

The key concept in this case is management of one’s personal knowledge and proper assessment and use of it. More specifically themes b (decision making criteria) and c (allocation of responsibilities) were detected. The teacher’s basic decision criteria were the situation’s urgency and seriousness and thus decided not to rely on her personal knowledge about injury treatments but rather seek for the engagement of someone with more experience in the matter. In other words she successfully allocated the responsibility to the person who was considered as more adequate for that task. In a quick, three-step process she identified the problem, she identified the possible solutions and selected the best alternative (Simon, 1977).

2. “There was a boy student at the age of 11 who was born a leader, a rebellion leader to be exact. He had a way of manipulating the whole class. During the breaks he gave instructions to the other students on how to behave...
in the classroom, not to participate in the lesson or hand in a white paper when a test was given. Everyone knew who the leader was but no one admitted it. Every child expressed an excuse for their behaviour as if it was initiated by themselves. He was so clever that he had formed his group which included a second-in-command person, the helpers and the followers. When two children opposed to his will he and his group confined them to a corner and threatened them. Unfortunately I and the full time teacher of the class could not do anything because no one would admit to anything. When one parent finally reacted more strongly a procedure was initiated for his removal from that school.”

In this example it seems that there are occasions in which the important issue is not the origin of knowledge – whether it is tacit or explicit, but rather the way one manages this knowledge. It is not always a matter of knowing what to do but rather of being able to apply this knowledge towards improving a situation of finding a solution to a problem. Namely theme d (communication) was pin-pointed in this case at two levels. At the first level the two teachers successfully communicated with each other and exchanged ideas regarding possible courses of action. At the second level, however, the teachers were unable to communicate with the child that was creating the problem. They were also unable to communicate with the other children in the classroom and therefore no adequate solution could be found.

3. “There was once a child with serious psychological problems and intense aggressiveness issues. Due to the fact that at that time I was employed by a private school, where incidents like that are treated more directly, I had to be in close telephone contact with the mother of the child. There were many occasions at which the child exhibited this behaviour. He would hit other children or would throw his exercise-books at my face. At first I tried to resolve this issue on my own but with no success. When finally I informed the director of the school of that behaviour he took the matter in his hands.”

The above example raises more than KM issues, such as worldviews. The teacher mentions the fact of her being employed by a private school, during the described incident, and comments on that with the intention of addressing my assumed perception, obviously imposed by the Hellenic society, that matters, in general, are treated more seriously and directly in a private school than they are in a public one. In other words she also responded to my question through an interpretivistic view by making reflective associations regarding my perception of society (Orlikowski & Baroudi, 1991 cited in Myers & Avison, 2002).
Particularly, themes a (knowledge awareness) and c (allocation of responsibilities) were found to relevant.

This case is a good example of tacit and explicit knowledge complementing each other. The teacher at first tried to show initiative and use her experiences to resolve the problem. She probably was not completely aware of her abilities at resolving issues of child aggressiveness or of her communicational skills. When her actions failed, the school director's explicit knowledge proved to be the appropriate medium towards the solution of the problem.

Additionally, the teacher’s actions point to the performance of a Knowledge Management process by capturing, sharing and applying knowledge, which resulted in her assessment that the responsibility for resolving the problem should be allocated to the school director, whose experience was considered as more sufficient over this matter.

4. “Once there was a boy who had an injury during the break. He was getting ready to kick a ball and just before touching it he fell on the ground. His leg began to swell immediately. I was summoned to the courtyard. When I was informed of the incident I directly called for an ambulance and notified the mother of the child to also come. I told everyone not to touch him to avoid hurting him more. We gave him water and tried to comfort him as he was afraid and ready to faint from the pain. Then the ambulance came and he was transported to the hospital with the escort of his mother. Afterwards we were told that we had acted wisely not to move him as he had a severe fracture in his thigh. As it turns out there was a cyst which was ‘eating’ his bone until it finally broke.”

This incident is a clear example of a decisive attitude and successful knowledge management on a personal level resulting to organisational benefit.

“Personal knowledge management is knowing what knowledge we have and how we can organise it, mobilise it and use it to accomplish our goals – and how we can continue to create knowledge” (Martin, 2006, p. 1).

More specifically theme a (knowledge awareness) was located in the above incident.

The teacher and school director was aware of the proper course of actions that were necessary in order to provide a quick and safe solution to a serious health issue. He ‘retrieved’ his knowledge regarding the treatment of injuries and followed the proper procedures by trusting this knowledge.

In reading the lines above one assumes that it was a smoothly executed operation and gets the impression that the steps were taken as if they had been instructed by a guide designed to provide answers for such emergencies. In
other words, the director's professional experience and his calm behaviour proved to be the proper tools in dealing with such a serious incident.

5. “There was a little boy whose parents had been divorced. There was a restraining order that prevented the father from visiting and approaching the child at a certain distance. At one time the father was very eager to see his child and so he jumped over the fence and reached the classroom where his child was having his lesson. The teacher called me at once and when I got there I found him at the door calling to his child, telling him that he loved him. The boy, however, didn’t want to talk to him (the father had assaulted repeatedly his mother). As he was shaking with despair I approached him and with a calm voice and self-control told him that what he was doing was illegal and that I was forced to call the police and he would spend the night in prison. After a while he was convinced to leave the school. The incident ended without anyone being hurt and with no other problems for the school.”

The above mentioned occurrence is a good example of the KM skills that a school director should possess in order to be able to solve difficult problems efficiently. Namely themes a (knowledge awareness) and b (decision making criteria) were detected in the incident in question. The criteria upon which the teacher – school director was based to make the his decision were the physical and mental well being of the specific child, the preservation of calmness among the rest of the students in the classroom as well as the legal protection of the school unit administration wise. Furthermore, at the specific case the teacher – school director was aware that he was competent to deal with this issue and thus combined successfully his explicit knowledge regarding the instructions given to him by the school administration's legal representatives with his personal psychological assessment skills, to resolve the problem in a way that was beneficial for all the involved parties, proving thus that KM is of truly interdisciplinary nature (Dalkir, 2011).

6. “At one time we had a class in our school in which there was a small boy with serious behavioural problems. I had informed the teacher from the beginning of the year, about that boy and we had agreed to make efforts to include the boy in the school reality and make him feel welcome so that his aggressiveness would gradually disappear. The teacher would try to make the other children realise the particularity of the boy’s character so that they would accept him and make him feel as part of the team. During that effort, at some times, even though the teacher knew that the boy was wrong she would defend him so as not to fill him with negativity and rejection. However, some
of the other children, and one in particular would see the teacher’s attitude as unfair towards them.

One time the mother of that other child came to the school at a frantic state, crying, waving her hands and yelling, being out of control. The reason was that she could no longer put up with this situation. After talking to the teacher, she came to my (director) office. After she threatened to remove her child from that school, I calmly explained to her our project. I asked her to give me a two months time before we would be able to see the results. I also told her that, since this was her neighbourhood, if we didn’t succeed in our efforts I and the teacher would be the ones to leave this school and not her child. I also asked her to respect our efforts and try to contribute as this project would benefit all the children of the class in their emotional maturity. I used a head-on approach that she hadn’t expected and she was left without arguments. She agreed to the project and now, that it proved to be a successful one, she is even ashamed to come to the school and ask of her child’s progress due to her previous outbreak.

The ‘handling’ of people is a very difficult task, especially when you have many fronts to take under consideration”.

Knowledge Management is connected not only with technical fields but also with anthropology, sociology, etc. (Dalkir, 2011, p. 8) and thus it is understood that, due to its multidimensional nature it is hard to be implemented by everyone. The aforementioned example shows clearly how interpersonal skills, a good background in sociology and administrative aptitudes can be employed to produce a positive result.

More specifically themes a (knowledge awareness) and d (communication) were found in this case.

The above mentioned teacher - school director used both his tacit knowledge, which translated to his ability to detect a difficult situation that needed subtle handling and his explicit knowledge, which he acquired through his studies on sociology at the university, to provide a solution that was to the benefit of every involved party.

Moreover, in this situation there was a three-dimensional communication occurrence. Firstly the director communicated clearly to the class teacher his intentions and plan concerning the inclusion of the difficult child in the classroom reality. Secondly, the teacher was to communicate in a productive manner with both the specific boy as well as with the other students in order to create a collaborative atmosphere within the class. Finally, the school director had a fruitful communication with a student’s parent by explaining his intentions to her and engaging her in his project and showing her how an unpleasant situation could be reversed.
7. “I had 14 children in the first grade. Among them there was a small boy with development difficulties and thus we are not able to communicate at 100%. One day I got in the class and I smelled something very badly. I understood that someone had ‘shit’ on themselves. As the moment was very awkward, I asked if anyone wanted to go to the bathroom. There was no reply. Then I asked them to close their eyes, and if someone wanted to go to the bathroom and was embarrassed to say so just rise, they could just raise their hand and I would be the only one to see. Again there was no reply. Then I said that if someone wanted to go but they were unable to hold themselves it is ok, it is nothing to be ashamed of. At that point one girl saw something on the floor and asked me what it was. I realized that it had come from that boy or girl, I picked it up with a paper tissue, threw it away pretending that it was just litter. Then I thought that perhaps someone had stepped on something during the break and that was the cause of the smell. So I asked everyone to check under their shoes. When every effort failed I took the children out in the court yard just in case there was something else and to let the air clear in the classroom. When we were out, the smell continued. In one final attempt to discover the truth I took the children to a bigger classroom which happened to be empty at the time. Then the child with the development issues came and told me that it had been him. I told him to go the principal’s office and called his mother to come and pick him up.

As it turns out the smell didn’t come from him. So the last thing I could think of was to play a game. As the desks were placed at a round shape I said: ‘You will sit at the chairs. As I clap my hands you will stand up and move to the next chair to your right’. I would remain at a fixed spot and thus when the bad smell would some close I would know. That final effort paid off.

However, by then it was time for the bell to ring and therefore the child’s parents had already come.

I know that I had wasted one whole hour to try to resolve this issue but the alternative, which was to ask them to pull their pants down, as was the advice of the school director when I explained to her what had happened. That was not acceptable by me. I preferred to treat the children with dignity and not make them feel uncomfortable.”

In this example it is seen how the possession of the right knowledge may not seem enough and how restrictions related to other factors such as limited time, lack of people management skills, etc. can become an obstacle before the resolution of a difficult situation.

In this case themes a (knowledge awareness) and d (communication) were spotted.

The abovementioned case is a most realistic depiction of the basic KM process which entails the collection of information, the assessment, the use and the re-
use of it at the correct time (Dalkir, 2001). The teacher in question used not only knowledge she had accumulated through her studies and the years of her teaching experience but also the tacitly stored knowledge in her mind by filtering it through her personal characteristics and combining it with her worldview regarding the proper behaviour towards children. Moreover and once again communication plays a most significant role in the smooth function of a school classroom. Even though the teacher was not successful at communicating with the students from the start, she managed to preserve the self-respect of each child and convey her message in a diplomatic and dignified manner.

In view of the fact that the present thesis is based on a qualitative research the method of stories / narratives proved to be a very successful way to elicit information from the participants, since “For the interpretivist the story may represent experiences as understood by the storyteller and relate primarily to the ideographic [understanding of the world]” (Hopkinson & Hogg, 2007, p. 158).

4.3 OBSERVATION

As mentioned before one observation was recorded and it involved an accident with a small child outside the school.

More specifically:

The assistant director, while talking to me, observed unusual movement and gathering of people outside the school courtyard and asked a passing by teacher if something had happened. The teacher replied that there has been a light accident with a car. The Assistant director in a flash took the keys to the doors of the school and ran out of her office. I tried to follow her but I couldn’t find her in the large crowd of parents and students who were gathered. From bits of information I heard as they commented and asked one another what had happened, I understood that a small child from that neighbourhood, not a student of the specific school, had run into the street without checking and a car had come onto him, fortunately not at a deadly speed. As the child had left his mother’s hand the driver hadn’t had the time to stop the car before hitting the child. The little boy was hurt in the head and slightly bleeding. By the time we got out someone had already called for an ambulance. However, the assistant director tried to calm the parents and the other students, treated the boy’s injury as best as she could and remained at the spot until the incident was ended. When she saw me, as we parted and I thanked her for the interview, she asked me to mention this incident in my
paper with the aim of depicting more vividly the complexity of the position of the Assistant director of a primary school and the multi-tasking skills one must exhibit in order to perform the duties of such a position in the most successful way.

Regarding the thematic correlation of this observation, themes a (knowledge awareness), c (decision making criteria) and d (communication) were detected. From the true incident described above it is gathered that knowledge awareness regarding personal and professional experience – two elements that are directly linked to the tacit dimension of knowledge – was the key element in the course of the event. “Tacit knowledge is developed through personal practical experience. Tacit knowledge is the overall result of failures, corrections, misconceptions and changed ideas” (Puusa and Eerikäinen, 2010, p. 309).

Her tacit knowledge was the force that dictated the assistant director’s actions regarding the treatment of the little boy and the provision of first aid. Professional experience in dealing with upset parents and a not easily controllable crowd, allowed for the lowering of the prevailing tension among students and parents.

The assistant director acted based firstly on the humane criterion of preserving the safety of a child attending in the best possible way to his injury. Secondly on the criterion of maintaining order in a stressful situation between students, parents and colleagues. Finally her efficient communicational skills allowed her to explain successfully to everyone present at the scene that they should remain calm and know that the situation was being handled in the best possible way.

### 4.4 DOCUMENTATION

The Hellenic legislation (Law No 1566/1985) analyses the role of many groups of people who are involved with primary education such as the Directors, Assistant Directors, School Advisors, Educators’ Boards, School Boards, School Committees, Primary Education Directorate, Parents and others and has definite articles concerning their duties. Yet, even though the state acknowledges their role only three of them are considered to be official administrative bodies, which are responsible for direct decision making in each primary school unit: the Director, the Assistant Director and the Educators’ Board (Law 1566/1985, Art. 11). Therefore initially we need to investigate these three positions. However, since this law is very long and covers all levels of the Hellenic Educational System
(HES), we will be focusing on certain parts and articles which can add insight to the subject matter of the present study.

In other words the following articles constitute the basic framework of duties and responsibilities in relation to which the teachers and the schools’ administrative personnel are called to make decisions and it constitutes an extraction of the regulations which are relevant to this study.

All the parts of the legislative framework are offered alongside as an appendix (see Appendix D) in the event that a reader wishes to have an overview of the relative legislation framework.

More specifically:

Art. 11 – Bodies, selection, placement, service status, duties
The administration bodies of each school of primary and secondary education are the school Director, the Assistant Director and the Educators’ Board.

D) Duties
1. The Director of the school is especially responsible for the smooth operation of the school, the coordination of the school life, the abidance by the laws, the circulars and the service orders as well as the implementation of the decisions made by the educators’ boards. He / she also takes part in the evaluation of the teachers’ work and cooperates with the school advisors.
2. The assistant director substitutes the school’s director when there is no director or when he / she is absent or at an impediment. In case there are more than one assistant directors, the substitute is appointed by the director. If there is no director then the substitute is appointed by the Prefect. The assistant director helps the director in the execution of his / her duties and is responsible for the administrative services of the school.

F) Educators’ boards (EBs)
3. The EB is a collective body with the aim of setting the directions for the best implementation of the educational policy and the function of the school. It is responsible for the implementation of the timetable, the analytic educational programme, the protection of the students’ health and safety, the cleanliness of the school premises and the organization of school life. Classifies the school’s needs and works for their satisfaction. It makes the best of any collaboration possibilities between the teaching personnel and the local community. It may decide the division of its members according to their knowledge fields with the aim of coordinating in the best possible way the teaching process and the implementation of the educational methods.
The duties, in more detail, of the directors, the assistant directors and the head of schools as well as the operation mode of the EB and their responsibilities, are determined by a decision of the Minister of Culture, Education and Religion. Decision No 353.1./324/105657/A1 published at the National Gazette (No 1340 / Okt. 16th, 2002) defines the specific duties and responsibilities of the Heads of Regional Offices in primary and secondary education, the Directors and Assistant Directors of school units and the Educators’ Boards.

More specifically regarding the Directors:

**Art. 27 – The work of the Directors of school units**

The Director is at the top of the school community not only as administrative but also as scientific and pedagogic responsible person in this field. More specifically:

- He / she leads the school community towards the setting of high standards and ensures the preconditions for their achievement in a school, which is democratic and open to the society.
- He / she guides and helps the educators in their work, especially the younger ones, assumes initiatives of educational and pedagogic nature and must set the example.
- He / she sees to that the school is the basic training unit of the educators in administrative, pedagogic and scientific issues.
- He / she directs the educators and coordinates their work. He / she cooperates with them in fairness and solidarity, promotes the coherence of the Educators’ Board, reduces conflicts, encourages the teachers’ initiatives and inspires them positively.
- He / she controls the progress of the works and directs the teachers towards the timely fulfillment of their obligations and finally he / she is responsible for the teachers’ evaluation as the law directs.

The following figure presents the main activities of each body in a succinct form.
On one hand the distinction mentioned above is a wise one as it is practically impossible to have all these teams convene each time an important decision has to be made. On the other hand each group assumes a significant role and is responsible for managing specific parts of knowledge which could be offered during an important decision making process.

But even though the participating groups, in the decision making processes of the schools, are just these three (for the purposes of this discussion we consider the Director and the Assistant Director to be two separate groups) this doesn’t efface the fact that many voices are heard. In fact at some point the roles assumed by these groups, as defined by the Hellenic legal framework, can reveal common responsibilities which poses a great problem of
jurisdiction among them. Article 11, paragraph F3 of the Law 1566/1985 mentioned earlier is one such example.

According to Simon (1947) “Decision making processes are aimed at finding courses of action that are feasible or satisfactory in the light of multiple goals and constraints” (p. 274). That is to say that our decisions are not made randomly but are goal driven.

A decision is a knowledge management activity and, especially in the context of an organisation, “…should be made in order to execute activities and to achieve goals” (Haris, 2012, p. 33). However, in this case the goal's achievement, which is the smooth operation of the school unit, through effective KM practices and thus successful decision making processes, is impeded by legislative obstacles. By the content of the above mentioned article it is concluded that the common scope of responsibilities between the Director and the EB introduces, by definition, a difficulty in the decision making process regarding issues that concern the school’s function and the development of school activities. One understands that the result is the formation of a working environment with contradictions and overlaps which are holding back the procedures and create an anti-progressive atmosphere.

Decision making as a multi dimensional process involves great knowledge management skills throughout the phases of planning, organizing, directing and evaluating the achievement of goals. This KM process, however, according to Hellenic legislation, is not to be performed only by one of these bodies but by all, at the same time and in fruitful collaboration. Successful knowledge management ensures the creative participation of the educators, thus contributing to the mutual comprehension of the goals of a school unit (Bush, 1995).

The vague and contradictory status of this part of the Hellenic legislation framework self-annuls its own validity since it appoints responsibilities of the same nature to different administrative school groups (i.e. school Director and Educator’s Board) and thus making unclear the boundaries of each group’s jurisdiction.

Furthermore, even though the laws provide some directions on a theoretical basis they don’t define clearly the group’s responsibilities. However, reality shows that most of the times the needs of a school unit are of a more practical nature or they at least require the clear perception by these administrative and educational bodies and their ability to combine their knowledge and experiences with the directives provided by the official agencies (i.e. the Ministry of Culture, Education and Religion)
5. DISCUSSION

This section involves the discussion of the outcomes of the research with respect to the main subjects of the study, namely Knowledge Management, Decision Making and Information & Communication Technologies.

As mentioned in the beginning the aim of this study was to explore the way knowledge is managed and decisions are made in the Hellenic public schools of primary education as well as identify the way Information & Communication Technologies are perceived as a facilitating tool for the decision making process in the school environment. Three were the main areas of concern: Knowledge, decisions and technology. The research questions were:

How do educators and administrators in Hellenic public primary schools manage their knowledge towards a decision making process?

How do educators and administrators in Hellenic public primary schools perceive Information & Communication Technologies and the idea of using it as a tool that could facilitate their decision making process?

The motivation for conducting this study arose from the significance of personal tacit and explicit knowledge for the successful function of an organization. Despite its fundamental role in the smooth operation of organizations, especially educational ones, it appears that the need for the management of it is not fully understood. This is partially because Knowledge Management is a discipline that is rooted in other disciplines – mostly information management and human-resource management – the boundaries of which are often misconceived or entangled (Jashapara, 2011). And that is why it is hard or insufficient to assign only one specific definition to this term. However, Davenport & Prusal (1998) through an integrated perspective offer a definition that combines the two most associated scientific fields of Information Systems and Human Resources and state that

“Knowledge Management draws from existing resources that your organization may already have in place – good information systems management, organizational change management, and human resources management practices” (p. 163).
As any other process, KM also aims at achieving certain goals. One such major – and perhaps final – goal is the making of a decision. Besides being the selection of one out of many alternative courses of action, decision and decision making can also be viewed through a knowledge-oriented lens which points that “...a decision is a piece of knowledge indicating the nature of an action commitment” (Holsapple, 1995, p.6).

Therefore the process of Knowledge Management is indisputably linked to a decision making process since

“[KM] is concerned with the representation and processing of knowledge by humans, machines, organizations and societies [and] aims to ensure that right knowledge is available in the right forms to the right entities at the right times for the right cost” (Haroon, 2007, slide 7).

Both abovementioned processes – Knowledge Management and Decision Making, through the passing of the years, have gone through changes, have acquired new meanings and various definitions and have, at times, utilized different means for their accomplishment. Since we live in the era of technological revolution, it is only inevitable that technology has penetrated these fields as well, gaining, in fact, ground minute-by-minute and assisting in their successful progress.

“...all technology is for humans and should facilitate and improve our wellbeing and quality of life” (Bradley, 2010, p. 183).

Especially the Information and Communication Technologies (ICTs) have become a vast scientific ground for the exploration of which other scientific fields contribute. The ICTs are an overwhelming phenomenon and as such it generates the formation of numerous theoretical frameworks which aim at understanding their penetration in the society and the interaction with it. Two main tendencies regarding the relation between humans and technology are surfacing: the utopian perspective, which implies that technology is a positive tool used for our progression and improvement, and the dystopian perspective, which directs that technology is a threat to our set lifestyle (Quan-Haase, 2013, p. 42).

These two tendencies have also been revealed through the research conducted for this study. Even though we live in times of intense use of informational and communicational technologies, these seem to have an equivocal importance to the educational community regarding their role in the management of knowledge and the decision making process.
Regarding the second research question of this study and the way administrators and educators in the Hellenic public primary schools perceive ICTs as a means that could facilitate the making of a decision, the picture is vague and puzzling.

On the one hand, when it comes to standardized tasks like the communication channels – e-mails, faxes, teleconferences, social media communications, etc. – and information research, the interviewees do not only consider ICTs useful but are totally committed to including them in the educational environment.

On the other hand, as far as expression of ideas and thoughts is concerned, some of the participants showed a somewhat mistrusting attitude towards the use of Informational & Communicational Technologies; nevertheless, not in their core nature but rather in the way that some of the available technological tools are used. As it seems Quan-Haase’s (2013) distinction between utopians and dystopians is verified but not so much in the division of people into categories as in drawing a borderline at the point where the, once helpful, technology becomes unnecessary or even an obstacle, impeding the efficient management of knowledge and the smooth decision making process.

Since the present thesis involved an investigation of the current situation regarding the management of knowledge, decision making and the ICTs in Hellas (Greece) the research began within the Hellenic educational environment. Although the bibliography regarding Knowledge Management, Decision Making and ICTs in the Hellenic school reality is not vast and the available relative previous works and sources, which were located, were extremely limited, meaning perhaps the lack of interest in the specific area, the selected subjects seems to have triggered the attention of the participants. Therefore the investigation was expanded to other cultural and educational settings, besides Hellas, from other countries as well.

Even though the main research setting of the related past works was different – other countries, educational infrastructures, cultural, political and financial environments – the main structure of the investigation – the philosophical background, the research methodology, the analysis mode – as well as the overall aim of those researches shared very similar characteristics with the present study, becoming thus a useful foundation.

Regarding the first research question of this study and the way the administrative and educational personnel of the Hellenic public primary schools manage their knowledge with the aim of making a decision, it becomes evident that teachers and school administrators (directors and assistant directors) possess valuable knowledge, which remains, most of the times, unexploited. Their accumulated work experiences are of deep
educational nature and professional value and yet the lack of opportunities to express their thoughts publicly and register their knowledge in a structured manner confines them in a box of 'tacitness'. Therefore, the management of their knowledge becomes a difficult and complex task.

Through this study, it has become clear that the ICTs can be used to assist the process of decision making in a school environment by allowing school directors, assistant directors and teachers to communicate with each other, at a personal and / or a collective level, and exchange valuable experiences and knowledge. However, “Knowledge is not just information. For information to make any sense, learn and become knowledge, the interaction with networks and peers is required” (Subashini et al., 2012, p. 546).

Even though three main subjects - KM, DM and ICTs - were employed as background for the formation of the interview questions and as the basis for the phrasing of the research questions, during the analysis of the material new themes – Knowledge awareness, Decision making criteria, Allocation of responsibilities, Communication, ICT dependency – deficiencies – immerged, verifying thus the complexity of transforming tacit knowledge to explicit.

Moreover, the flowing nature of the storytelling method also allowed for not only themes or notions to come to surfaces but also feelings and deep thoughts.

As it is understood, the transfer of a responsibility for a decision from someone to a person who is above in hierarchy is not always the result of a wish to refuse assuming such a responsibility or the result of a weakness in making that decision – tacit dimension of knowledge – but rather an action which is imposed by the existing legislative framework – explicit dimension of knowledge – and the prevailing view regarding competences and responsibilities in a school environment.

Thus it seems that, in certain instances explicit knowledge is trusted and selected more often than tacit as a base for the creation of “knowledge assets” (Sanchez, 2005, p. 6) which are, in turn, useful for the smooth decision making process by the school personnel.

Nevertheless, the position of the school Director is widely regarded as a ‘safety net’. He/she will be the one who is ultimately responsible for providing a solution to a difficult problem.

The research has also identified personal involvement as a key factor for the resolution of serious matters. Being a good educator at a primary school also requires multi tasking skills at multiple levels. They need foremost to have excellent communicational and interpersonal abilities. From the experiences
that were unfolded during the narratives it was revealed that the administrative and educational staff of a primary school must show negotiation and persuasion skills with small ages and young not easy controllable, at times, children and at the same time function as effectively with parents of different ages, educational backgrounds, financial circumstances, waving moods and mental maturity.

The answers of the participants in this research have shown that the education and training of children is as enchanting an endeavor as it is complex. Moreover, social conventions, intense personalities and a restrictive and ambiguous legal framework make this an, even more, challenging 'scenery'. The large number of people who are involved in the educational process - teachers, administrators, school directors, parents, social services - and the diverse individual backgrounds paint a complicated picture. In an environment of many alternatives, where many important decisions must be made on a daily basis, the decision making process becomes a journey in stormy weather and that is why “having available knowledge to decision makers is crucial for improving individual and organizational performance” (Noman & Aziz, 2011, p.1).

5.1 ACADEMIC CONTRIBUTION OF THE STUDY

On a theoretical level, this thesis wishes to contribute by introducing a new approach in the controversy between the believers of the one dimensional knowledge – tacit knowing – (Polanyi, 1966) and those who support the duality of knowledge – tacit and explicit – (Dalkir, 2011; Nonaka & Takeuchi, 1995).

The study has shown that importance should not always be placed on the transformation of knowledge from one state to the other. There are certainly times when tacit knowledge cannot be totally transformed to explicit. However, if the receiver of knowledge, through personal assimilation techniques, can internalize it and then perform his / her professional tasks as effectively as the transmitter and in a way that doesn’t disturb the continuity of work and the function of an organization, the complete or partial transformation of knowledge from one dimension to another becomes of less importance.

Thus, Knowledge Management and Decision Making don’t necessarily have to be concerned with the type of knowledge that lies in the background but they may focus on the ways in which this available knowledge can be utilised towards the best possible solution to a problem.
Furthermore, and in relation to the aim of this thesis, which was to depict the present situation regarding the way the primary school personnel manage their knowledge and use it in the Hellenic public primary schools, this study is one of the few existing in Hellenic literature that combines KM, DM and ICTs in the educational field and especially in primary schools. Finally, this study may also become of interest to other professions such as school advisors (public and/or private) and psychologists since the topics it discusses – the management of knowledge, decision making and the relation of people with technology – are associated with other scientific fields as well.

5.2 PRACTICAL CONTRIBUTION OF THE STUDY

The employment of the interview method in this thesis led to several interesting conclusions. Especially the inclusion of the last question (see Appendix C), which aimed at capturing the unstructured tacit knowledge of the participants, gave room to the expression of some significant notions and concerns of a more practical nature which are indirectly associated with the basic themes of this study (KM, DM & ICTs).

More specifically, the present study draws attention to the following issues, as they were expressed by the participants:

Regarding Knowledge Management
- There is deficiency in organization and coordination of services as well as significant lack in personnel
- There is exhausting bureaucracy which prevents progress and impedes the assumption of initiatives
- There is a need for the institution of a centrally administered service which will deal with the specific problems of each school unit

Regarding Decision Making
- There is a need for the further education (i.e. seminars) and extended opportunities for on-the-job training of the educators on ways to cope with problematic situations and achieve maximum success in decision making.

Regarding Information & Communication Technologies
- There is insufficient funding and lack of basic resources (i.e. personal computers)

The analysis of each one of the above-mentioned subjects would entail the conduct of several other new independent researches and thus it is impossible
to include all of them in the present thesis. However, the contribution of this study to the field of Informatics is the identification of these important issues and the externalization of the educators’ tacit knowledge.

Moreover, and in relation to the initial aims and the selected research questions, it is understood that the correct assessment and use of information, which is actually KM in practice, leads to an effective decision making process. Pursuant, the correct decisions function as useful guidelines and best practices, which can be followed by peers in the occurrence of similar situations.

The suggestions section provides a more detailed description of the proposal regarding the fruitful use of the ICTs with respect to the unobstructed communication between school units and the sharing of valuable knowledge between individuals.
6. SUGGESTIONS AND FUTURE RESEARCH

The present section involves the proposal for certain actions that could be taken as well as the need for further research regarding the relationship between people and technology.

This research aimed at shedding light at the most significant aspects regarding the management of knowledge towards decision making processes in Hellenic public schools of primary education. It also aimed at identifying the way that ICTs are considered by the school administrators and educators as a helping tool.

This thesis’ suggestion is related foremost to the first research question and it regards the post graduate education and the continuous training of the educators and especially those with an administrative role, on knowledge management issues as well as the conduct of seminars on decision making approaches and practices. With a powerful interdisciplinary tool in their hands educators and school directors and assistant directors could be more prepared to deal with real life problems with clearer judgment and saving much time and energy.

The idea is the creation of a new tool which could aim at the improvement of the primary schools’ daily function. The knowledge acquired from the educational personnel’s experience can be shared and then be reused by the same people or their colleagues. The educators’ tacit knowing may become explicit knowledge. The produced digital record of experiences could be the stand upon which the school directors can be based to take action and resolve the occurred problems. It could strengthen their role as it may evolve to be the institutionally grounded instructional tool based on which the directors and the teachers will be able to produce arguments for their decisions. ‘Knowing what’ and ‘knowing how’ are two basic elements of a decision making process. “These two aspects of knowing have a similar structure and neither is ever present without the other” (Polanyi, 1966, p. 7).

The suggestion of this research can save the school directors and educators time and effort as they will be able to rely on the precedents created by other colleagues without having to ‘reinvent the wheel’ each time a problem arises. They will have the opportunity to quickly select from a range of documented choices and final decisions – even their own previous ones – and adjust them according to each case. Finally this digital record may relieve the teachers...
from other than the educational responsibilities that they shouldn’t have and thus letting them being more focused in their teaching profession.

In clarifying the aforementioned terms in this study, the word 'choices' refers to the variety of available options regarding the solution of a problem and the word 'decisions' relates to the finally selected action, after careful consideration, as the best practice towards the resolution of a difficult situation (The Oxford English Reference Dictionary, 1996).

Moreover and in balancing the event of a possible ‘absolutistic’ behaviour of the school directors, this digital record can offer the basis for a fair resolution of differences occurring in the school environment, improve the transparency levels and promote a democratic framework for the smooth decision making process.

The new approach in problem solving can be designed to help them do their work faster and more effectively, be more accurate and produce a trustworthy outcome as well as, in a larger scale, promote the smooth centralized administration of all primary school units by the Ministry of Culture, Education and Religion. Therefore the present study is considered as significant as it aims at producing valuable documented knowledge about the decision making process in primary schools as well as the possible contribution of ICTs in the school environment.

More specifically the present study moves on the path opened by the structured digital framework suggested by Zhang & Han (2008, p. 23):

“Universities that have established university knowledge base and intranet shall give full consideration on how to facilitate the communication and share of teachers’ tacit knowledge. For example, internet discussion system can be adopted, where teachers could write down their experience and practices and store them into the discussion database for communication and share. To apply expert system in internet could expedite the explicitness of teachers’ tacit knowledge. Groupware can be applied to summarize teachers’ skills, experience and knacks, which could expedite the communication and share process of tacit knowledge to certain extent. For the experience and skills that are hard to code, “searching peopled data base”, “knowledge map” and expert network system shall be established so that people can quickly find teachers who have certain tacit knowledge.”
In other words the present thesis proposal is to adjust the aforementioned suggestion and incorporate it to the environment of a primary school and thus create a data base of incidents / a log of experiences. It could become a reference point for every educator, school director or any other party interested in educational and administrative issues.

It could be organized in categories and themes portraying the step-by-step process and the communication channels one has used towards the solution of a problem. The idea is to have a social media like environment – perhaps in the form of a forum – where all interested parties can enter and write their experiences and, at the same time, be available for questions by others and a general discussion over mutually concerned issues. It could be a totally separate entity or it could be incorporated in one of the existing educational sites, preferably the one managed by the Ministry of Culture, Education and Religion.

The exact form of this tool cannot be decided by the present thesis as the implementation of such a project would require the involvement of a team of several experts such as a web developer, a programmer, a web design specialist and of course members from the educational field as educators will be mostly the users of this application. Thus this study doesn’t offer a specific title for such a project and the word 'guide' which was initially selected is only indicative as the final structure that is yet to be decided.

Moreover, in an attempt to paint the general picture, as mentioned above, this internet tool could be enriched with a data-base of incidents, organised in alphabetical order and a communicative part (i.e. live chat rooms, forums, messages space, e-mail service, etc.) which would enable discussions and knowledge sharing among educators and all other people from relative scientific fields. This tool could be the application of the true meaning of the ICTs which is the use of technology to improve people's lives and enhance the communication between them (Bradley, 2010).

One final suggestion would involve the future research regarding the appeal of the existing web sources to the educational community and the exploration of the reasons behind the dichotomy in using those tools.
7. CONCLUSIONS

This part of the study includes the inferences of the research

The aim of the present research was to unveil the prevailing conditions regarding the management of knowledge and the decision making process in an educational organisation such as a Hellenic primary school, as well as to identify the way ICTs are perceived in the aforementioned school environment.

The present study engaged in a qualitative research through the interpretivistic lenses. Decision making approaches were discussed in view of problems that are in need of solutions. The methods of interviews, storytelling, observation and documentation were employed so as to collect the necessary data before using analysis to reach to the final outcomes.

The research produced interesting results which should be taken into consideration and become the foundation for other extended researches. It brought forth important issues regarding the perception of certain concepts and theories, such as Knowledge Management and Decision Making and the way the role of technology is viewed. The existing legislation, although extensive, cannot be considered as a powerful tool for the successful resolution of problematic situations. Individuality and personal perceptions are the main protagonists of this thesis.

It is concluded that the initial research questions have been answered. A school unit should be considered as any other service organization which produces and manages knowledge and therefore is in definite need of Knowledge Management. Although KM has been strongly associated with business organisations of commercial value (Nonaka & Takeuchi, 1995), this study has shown that it can also be used in other fields such as education.

The examination of the decision making process by the school Directors, Assistant Directors and Teachers has shown both the existence and the absence of patterns and has lead to the main factors that have an influencing role in the process.

It has been pointed out that the people who are directly connected with the school environment have more than a fairly good relationship with technology,
which they admit to think of as helpful in many of their activities, whether educational or administrative. However, the present thesis has also demonstrated that technology's popularity doesn't reach the same level in all cases and that there are reasons why educators are at times reluctant to use it. Nevertheless, the Information & Communication Technologies offer so many opportunities which should be taken advantage of in order to promote the personnel’s effectiveness.

The present research is by no means exhaustive of its subject matter. It has accomplished though to shed light to significant aspects of the function of the Hellenic public schools of primary education and has offered a different perspective in the way diverse theories can be combined towards the leveraging of their operation. It hopes to trigger clever minds to go deeper into the issues raised.

![Figure 4. The Hellenic School of Primary Education - Design by Dimitrios Tsintzo](image)
8. REFLECTIONS

This last section presents my resolutions regarding the process of writing a master’s thesis from the time of selecting the topic to its completion.

The main result from my engagement in this research is that the initial plan is often not followed. With respect to the research design, the methodology and even the scope of the research, there is a constant shifting between ideas and notions. More specifically:

- The selection of the philosophical theory which would be followed proved to be a complicated process. The identification of the approaches that represent me the most was a time and energy consuming task.

- The participation of people must not be taken for granted. Not everyone is willing to offer assistance or to share their thoughts with a researcher. And in the present study, this factor, along with the time limitations explained at the beginning of the thesis, have lead to the undertaking of interviews with less people than the ones originally planned.

- Open questions are a good choice only if the interviewee is talkative and ready to provide information. However, since one cannot foresee the progress of an interview a researcher must always be prepared. That is to say that there should be a back-up set of (supplementary) questions and/or several examples at hand so as to trigger the participants to unfold their personal opinions, share their experiences and let their knowledge be elicited so as to produce sufficient answers.

- The surroundings – place and time of interview – play a significant role on the fruitfulness of the discussion. One of the interviews with one teacher took place at the educators’ office. At first we were alone. Soon after we had started another teacher came into the room to prepare some documents for her next class. She remained there until the end of the interview. One would be ignorant not to notice the change in the course of the interview. The answers became shorter and plainer, the tone of her voice lower and even her facial expression changed to a more neutral one. Even though we were at a large distance from the other teacher and could not be directly heard, the participant thought it would be best to be more restrained in case the
other teacher could overhear our conversation and thus form an opinion about her.

- Besides being prepared for the participant who will not be very talkative a researcher must also be prepared to be flexible. The questions I had prepared seemed enough in number and in content. However, as the interviews progressed, depending on the answers received from the participants, I was forced to expand the questions or make additional ones. That task requires flexibility, alertness and extreme attention to the interviewee’s presented ideas. There may be answers which are ambiguous, incomplete or leave an innuendo. The interviewer needs to clarify everything before parting from the interviewer.

Nevertheless, besides the difficulties in executing my plans I am more than satisfied with my involvement in the endeavour of preparing a master’s thesis as it was an illuminating experience.
9. REFERENCES

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APPENDICES

APPENDIX A

Note: The above certificate was necessary (for security reasons — due to my entering school units with small children) for me to introduce myself, to prove that I am conducting this research and thus have no trespassing issues.
APPENDIX B

Informed Consent Form
for the participation in a Master Thesis

Study Title
Knowledge management and Decision Making in Hellenic primary schools.

Researcher: Stella Tyrteou
Level: Master Programme In Information Systems
Educational Institute: Linnaeus University

Purpose of the Research
The purpose of the research is:
a) to investigate the current situation in the Hellenic public primary schools concerning the way knowledge is managed in view of decision making in Hellenic public primary schools
b) to identify the perception of the directors, the assistant directors and the teachers of Hellenic public primary schools regarding the concepts of Knowledge Management and information & Communication Technologies in view of decision making.

Description of Research Project
I will conduct interviews with the directors, the assistant directors and the teachers of public primary schools in order to collect information about their experiences and the difficulties they encounter during the performance of their tasks. My research questions regard the most important practical needs of a public primary school, the level of awareness of the Knowledge Management tools that can be used to facilitate the performance of tasks and the responsibilities assigned to the director, the assistant director and the teachers, their comprehension of technology integration in the administrative practice, the way decisions are made and the way in which Decision Making Theories are considered before decision making processes.

Benefit for the research and benefits for the participant
As a researcher I will acquire a deeper understanding of the processes involved in the daily function of public primary schools and the important demands of an educational organisation. The participant may have the chance to influence the outcome of the study towards the creation of a new tool to help in the schools’ administration. He/she may also benefit from the
suggestions that the study will bring forth, with the use of new techniques to smoothen his/her decision making process regarding important issues.

**Risk and discomfort**
No risk or discomfort is anticipated as full anonymity is assured. Only the age and the position of the participant will be mentioned. The participant’s name will not be mentioned either. No personal or other information that may identify the participant will be shared with any third parties.

**Participant’s rights during the interview**
The interviewee can reserve her/his rights to edit or withdraw the interview. After the interview the participant will be given a draft of the interview content for his/her approval before the final inclusion in the thesis. The interview is conducted on a volunteer basis and the interviewee / participant can leave the interview any time s/he wants without giving any explanation.

**Access to interview material**
The recorded material and original transcripts will be at the limited access of the researcher who is conducting the interviews, the supervisor of the thesis and the examiner of the research. The recorded material, transcripts and/or other material which will be gathered during this research that may identify the participants will not be given to any third parties or agencies.

**Questions about the research**
The interviewee can ask any general questions about the research or his/her role in it. Please feel free to contact Stella Tyrteou, MIS student, by email: (st222fi@student.lnu.se)
Confidentiality
I understand the above explanation and agree with the statements above.

Yes □  No □

I understand that my participation in this research is on a volunteer basis and I can withdraw from the research any time I want without giving any explanation.

Yes □  No □

I understand that I can ask the researcher to remove my data any time I want without any explanation.

Yes □  No □

By signing this document I consent to participate in the research study and I allow the researcher to use this data and information in her master thesis.

Yes □  No □

I agree with digital audio recording of data.

Yes □  No □

By signing this document I consent to participate in the research about the knowledge management tools awareness, the use of Decision Theory and the use of the ICTs in the Hellenic public primary schools. The data / information that I share with you can be included in your master thesis.

Yes □  No □

I want to keep my anonymity □

Date of interview: ____________________________
Place: ________________________________
Participant's Name: ______________________
Participant’s e-mail address: ______________
Participant's Signature: _________________
Researcher’s Name: Stella Tyrteou __________
Researcher’s e-mail address: st222fi@student.lnu.se
Researcher’s Signature: ___________________
**APPENDIX C**

**Interview Questions**

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**Q1:** Can you please state your name, age, position and years of experience?

**Q2:** Can you please describe an ordinary day at your work, from when you arrive at your workplace until you leave?

**Q3:** What do you know about Knowledge Management as a means for the administration of an educational organisation?

**Q4:** In your opinion, what are the most important practical needs of a public primary school? *(for a classroom from the teacher’s position).*

**Q5:** As I understand each teacher is responsible for certain administrative issues besides teaching, for which you must make various decisions during the day. Can you give some examples of the types of decisions?

**Q6:** Could you tell me how you decide on such issues? Do you follow a specific procedure when you make a serious decision? *(for the whole school as a Director or for the class as a teacher)*

**Q7:** Does this procedure involve the participation of other people as well? In what way?

**Q8:** What kind of information do you need to make these decisions?

**Q9:** Do you take advice from colleagues before making a decision? *(If yes)* these colleagues are only from the same school that you work in or from others as well?

**Q10:** In case you have a difficulty in making a decision, whom do you turn to?
Q11: Which of the following incidents has occurred in your school?
Security issues:
Earthquake, fire, bullying, accidents, theft, epidemic illness.
Discrimination issues:
Racial, religious, disability, physical appearance.

Q12: How often does it occur and how do you decide upon such issues (collectively for the whole school as a Director or for the class as a teacher)?

For Directors ----- Issues: educational excursions, provision of equipment (i.e. PCs, stationary, general repairs), teacher behaviour.

For teachers ----- the responsibility each teacher is assigned with.

Q13: I would like you to recall three instances (the choice of topic is free) at which you had to make an important and difficult decision and describe in as much detail as possible the step-by-step process.

Q14: Information and communication technologies are used by many educational organisations for their administration. Do you use technology in the administration of your school? Can you please provide examples?

Q15: How do you think these systems facilitate the administration process?

Q16: Do you believe that the use of technology is necessary for the administration of a primary school? Why?

Q17: I am thinking of making a suggestion about the creation of an internet database of incidents, a kind of log of experiences and the step-by-step process towards the solution of a problem (practical or more complex). What is your opinion about such a project?

Q18: Would you use it (read it and contribute by writing your experience) or not, and why?

Q19: Is there something you would like to comment on regarding the administration of a public primary school? An issue you would like to bring to light, a complaint, a suggestion?
APPENDIX D

Legislation framework of the Hellenic Schools of Primary Education

Art. 11 – Bodies, selection, placement, service status, duties

D) Duties

1. The Director of the school is especially responsible for the smooth operation of the school, the coordination of the school life, the abidance by the laws, the circulars and the service orders as well as the implementation of the decisions made by the educators’ boards. He / she also takes part in the evaluation of the teachers’ work and cooperates with the school advisors.

2. The assistant director substitutes the school’s director when there is no director or when he / she is absent or at an impediment. In case there are more than one assistant directors, the substitute is appointed by the director. If there is no director then the substitute is appointed by the Prefect. The assistant director helps the director in the execution of his / her duties and is responsible for the administrative services of the school.

3. The duties, in more detail, of the directors, the assistant directors and the head of schools are determined by a decision of the Minister of Culture, Education and Religion.

F) Educators’ boards (EBs)

1. The EB of each school is constituted by all the teachers of the school, regardless their occupational status (i.e. part or full time) with the school’s director being the president.

2. The EB meets pursuant to the president’s invitation, regularly at least once before the beginning of lessons and once at the end of every trimester and extraordinarily when it is thought as proper by the president or it is asked in writing for specific issues by at least one third of its members.

3. The EB is a collective body with the aim of setting the directions for the best implementation of the educational policy and the function of the school. It is responsible for the implementation of the timetable, the analytic educational programme, the protection of the students’ health and safety, the cleanliness of the school premises and the organization of school life. Classifies the school’s needs and works for their satisfaction. It makes the best of any collaboration possibilities between the teaching personnel and the local community. It may decide the division of its members according to their knowledge fields with the aim of coordinating in the best possible way the teaching process and the implementation of the educational methods.

4. The operation mode of the EB and their responsibilities in more detail are determined by a decision of the Minister of Culture, Education and Religion.
Art. 13 – Educational personnel of primary schools

4. The irremovable positions of the educational personnel in the public primary schools are set at 36,159. This number also includes school advisors of primary and special education, heads of primary education offices and other categories according to the number of students that are admitted in each school.

7. The abovementioned factor also determines the number of working hours that each educator is supposed to deliver. The directors and heads of primary schools perform both educational and administrative tasks.

8. All educators of primary schools are required to remain at the school premises during working days even when their teaching hours have been completed, so as to offer other services related to the general educational work such as the participation in holiday, athletic and cultural events, the briefing of parents and legal guardians, keeping of school books and performance of other administrative tasks. Every educator remains at school beyond their teaching hours, during working days, in order to perform a specific work which has been appointed to them by the administrative body of the school. However, this time cannot be more than 6 (six) hours per day or 30 (thirty) hours per week. Mothers of children up to two years old are excluded from these services.

The Decision No 353.1./324/105657/A1 published at the National Gazette (No 1340 / Okt. 16th, 2002) defines the specific duties and responsibilities of the Heads of Regional Offices in primary and secondary education, the Directors and Assistant Directors of school units and the Educators’ Boards. More specifically regarding the Directors:

Art. 27 - The work of the Directors of school units

The Director is at the top of the school community not only as an administrative but also as a scientific and pedagogic responsible person in this field. More specifically:
- He / she leads the school community towards the setting of high standards and ensures the preconditions for their achievement in a school which is democratic and open to the society.
- Guides and helps the educators in their work, especially the younger ones, assumes initiatives of educational and pedagogic nature and must set the example.
- Sees to that the school is the basic training unit of the educators in administrative, pedagogic and scientific issues.
- Directs the educators and coordinates their work. He / she cooperates with them in fairness and solidarity, promotes the coherence of the Educators’ Board, reduces conflicts, encourages the teachers’ initiatives and inspires them positively.
- He / she controls the progress of the works and directs the teachers towards the timely fulfillment of their obligations and finally he / she is responsible for the teachers’ evaluation as the law directs.

Art. 28 – General duties and responsibilities of the school Directors

The Director and the Head of the Primary school collaborates with School Advisors, the Administration Executives, the educators as well as the students and their parents in order to jointly achieve the educational goals. More specifically:
- He / she represents the school in all its relations with third parties.
- He / she remains at the school during all the working hours and is responsible for its smooth operation and the coordination of school life.
- He / she implements the laws, the presidential decrees, the circulars and the official orders of the Administration Executives and materializes the decisions of the Educators’ Board.
- He / she sets up the committees responsible for the examinations, the collection of the necessary papers and the issuance of the results.
- He / she draws up the evaluation reports for the teaching and administrative personnel, according to the legislation.
- Informs the educational staff, the parents and the students regarding the educational policy, the goals and the mission of the school.
- He / she has the pedagogic responsibility for the shaping of a positive atmosphere in the school environment and the development of harmonious relations among the members of the school community.
- Informs the newly appointed and the substitute teachers of their right and obligations and provides them with copies of the basic laws, decisions and circulars concerning the educational system.
- In case there are more than one Assistant Directors in one school the Director divides the responsibilities and tasks amongst them.
- He / she is, in cooperation with the Assistant Director, the secretary of the school and the competent educator for the administration of the school correspondence and the keeping of any books and/or documents expected by the relevant legislation.
- He / she is responsible for making decisions towards the smooth operation of the school.
Article 29 - Duties and responsibilities of the school Directors in relation to the Educators’ Board

The Director of the school unit:
- Invites the members of the Board in the meetings, over which he / she presides. He / she draws up the agenda and proposes or asks another teacher to set the subjects for discussion.
- In the meetings of the Educators’ Board he / she proposes the distribution of other extra-educational tasks and makes the personnel’s potentials productive within the framework of his / her responsibilities.
- In collaboration with the educators he / she is responsible for composing the school timetable keeping in mind its efficient function.
- Informs the Educators’ Board of the school committee’s works. Along with the Board he / she minds for the maintenance and the function of the school premises as well as the provision of the necessary supervisory and teaching means.
- Along with the teachers, is responsible for the cleanliness and the aesthetics of the school premises as well as the protection of the health and safety of the students.
- Informs the Educators’ Board of the educational legislation, the circulars and the decisions regarding the operation of the school and the implementation of the educational programmes.
- Contributes to the creation of an environment of democratic behavior between teachers and students and along with the educators is responsible for the maintenance of discipline.
- Sees to that, in case of an educator’s absence, the relevant instructive hours are covered by modifying the daily teaching timetable or by arranging for the presence of a substitute teacher.
- Along with the Assistant Director and the competent teacher, he / she is responsible for the distribution of the educational materials (books).
- In collaboration with the educators, he / she draws up the schedule for briefing the parents.
- Provides the educators with specific orders so that they meet their obligations according to the regulations that are in effect.
- When necessary, addresses the educators with instructions for solidarity. However, in case there are some who don’t meet their obligations and duties and all efforts remain without results, he / she informs the Educators’ Board, the administrative supervisor and the competent School Advisor. If these actions are still without results, then there is a written report to the Director or the Head of the Educational Office.
- He / she is informed of the reasons for absence of the educational staff from the school and / or the meetings of the Educators’ Board and, when necessary, acts according to the prevailing regulations.

**Article 30 – Duties and responsibilities of the school Directors in relation to the School Advisors, the Educational Director and the Head of Office**

The school Director:
- In collaboration with the Educators’ Board and the School Advisors, promotes the educational programmes that are conducted for the educational staff and, besides participating in them, he / she is also responsible for their organization.
- Collaborates with the School Advisors or the Director of Education or the Head of Office or calls for meetings with them so as to jointly deal with the problems occurring at the school unit.
- Assumes, along with the School Advisors, initiatives for the assistance of the younger teachers in their educational work.
- Informs the competent School Advisor and the Director of Education or the Head of Office of the conduct of educational or other visits to places of historic and cultural reference and productive businesses.
- Timely informs the Director of Education or the Head of Office for any lack in the educational personnel.

**Article 31 – Duties and responsibilities of the school Directors in relation to the students**

The school Director:
- Composes the number of classes in each grade, as the legislation directs, and divides the students according to legislation and the pedagogic principles, without social discriminations.
- Is responsible for the signing of the study certificates, along with the educator who has drawn up the title and the other teachers, if necessary.
- Collaborates with the student communities for the organisation of school life in an environment of understanding and a sense of responsibility.
- Implements the prevailing stipulations regarding the mandatory attendance of student in school.
- Contributes to the formation of a friendly pedagogic environment
APPENDIX E

The grading system in the Hellenic primary schools according to Article 3 of the Presidential Decree 462/1991 published at the National Gazette 171/1991:

In classes A and B the grading scale is verbal / descriptive:

- **A (Excellent)** – when the student fully meets the requirements of the lessons
- **B (Very Good)** - when the student meets to a great extent the requirements of the lessons
- **C (Good)** - when the student meets to a satisfactory extent the requirements of the lessons
- **D (Almost Good)** - when the student meets to a basic extent the requirements of the lessons

In classes C, D, E and F the grading scale is verbal / numerical:

- Excellent (9-10)
- Very Good (7-8)
- Good (5-6)
- Almost Good
APPENDIX F

PUBLIC SECTOR

The Ministry of Culture, Education and Religion manages the Pan-Hellenic Schools Network (PHSN), which safely interconnects electronically all the school units of primary and secondary education, the central and regional educational services, students, educators and other training agents of the Ministry. Via this site the ministry provides the educational community with services of electronic learning and, communication and collaboration. PHSN fully certifies all the members of the school community (schools, administrative units, educators, students and administrative personnel).

Its main services are:
- Broadband Connection: all public schools and administrative units enjoy full broadband connection.
- Internet gate: The site http://www.sch.gr operates as an informational port regarding educational activities
- Electronic mail and mailing lists: it is the most popular of its services offering free distribution of mails between all its users.
- Web hosting: it offers the schools, the administrative units and the educators the possibility of creating and easily maintaining their site in the World Web.
- Teleconference Service: the place (http://meeting.sch.gr) is completely organised in the Hellenic language and supports audiovisual communications, slides presentations and the sharing of software applications between its users.
- E-learning service: the e-learning service (http://e-learning.sch.gr) is based on the internationally acknowledged electronic educational management system moodle promoting collaborative and cooperative learning.
- Electronic School Classroom service: (http://eclass.sch.gr) it complements and enriches the daily educational activity with the use of modern training tools.
- Educational communities and Blogs: the Web 2.0 tools are used in the educational process due to their interaction and collaboration opportunities. The (http://blogs.sch.gr) service is based on the open code platform WordPress.
- Electronic School Journals: (http://schoolpress.sch.gr) also based on WordPress, adds value to the classic educational process and offers room for the publication of groups’ activities.
- Video and Live Streaming services: (http://vod-new.sch.gr) it offers the possibilities of searching, uploading and playing video productions with contemporary means.
- Communication and Collaboration Service: (https://www.uc.sch.gr) it gives schools and educators the opportunity to make phone calls, video calls, teleconferences with multiple users, voice mailing, fax reception and automated forwarding to a mail address, instant messaging and presence indication.

http://edu.klimaka.gr/

As a service devoted to the development of human and social capital, it offers constant updating on educational issues starting from primary education all the way to
lifelong training. If provides information on school operational issues, students’ examinations, educators’ placements and other professional matters, conferences, scholarships, etc. It also provides opportunities for communication, synergies development as well as articles and other materials submission.

PRIVATE INITIATIVES

http://dschool.edu.gr/
The project “Digital Educational Platform, Interactive Books and Repository of Learning Material” is co-funded by the European Union (European Social Fund and the Hellenic State as part of the Business Programme “Education and Lifelong Learning” organised by the National Strategic Reference Framework (NSRF) 2007–2013 and is implemented by the Computer Technology Institute and Press (CTI) called ‘Diofantos’.

http://www.pde.gr/
Educators’ Community PDE was created in December 2005 with the aim of exchanging information regarding the field of education as well as the timely and accurate updating (with press releases and several announcements from the competent agencies) with respect to the Hellenic primary and secondary education.

http://www.e-selides.gr
It offers assistive training material and news regarding educational issues regarding Hellenic schools and school communities of primary education.

http://www.pedia.gr/about.html.
The site’s aim is to make use of the abilities of Internet for educational matters. More specifically:
- To present the Hellenic Educational System (HES) to people all over the world.
- To give tribune/step to every teacher, pupil, university student for free expression.
- To create a communication bridge between teachers around the world. To provide space for the exchange of ideas, knowledge and opinions between people who participate in the educational process i.e. pupils, teachers, high school teachers, school advisers etc.