

The development of literacy amongst children in Greek kindergartens

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ABSTRACT

This thesis investigates the development of literacy amongst children in Greek kindergartens. Performance on the precursors of reading (phonological awareness, letter knowledge and concepts about print) was explored, as well as the relationships between these skills and early reading and spelling skills during their time in kindergarten. Children's views and attitudes towards literacy as well as their experiences of literacy at home and in kindergarten were also investigated. These were explored in relation to the school environment. The project was undertaken at a time when new literacy policies affecting Greek kindergarten were implemented by Government initiatives. The participants in the study were 54 children from three separate classes in state kindergarten schools in Athens, Greece.

Experimental tasks were developed to measure the kindergarteners' performance on the precursors of reading (phonological awareness, letter knowledge, concepts about print); on word-, sentence- and text-reading; on name- and word-spelling; to determine what skills they have upon their entry into kindergarten; and to map how these change over time. Children's and teachers' experiences and views on literacy were assessed through developed interview questionnaires at two points in time. Quantitative and qualitative methods were used to analyse the data.

Results suggested that Greek kindergarteners' skills in letter-sound knowledge and phonological awareness were associated with their performance on early reading and spelling. The analysis further indicated that the informal literacy instruction children received in each kindergarten class resulted in differences between them relative to their performance on the literacy tasks. However, gender and age did not appear to have any influence on their performance in literacy. The investigation of children's experiences of literacy showed that all children had plenty of experiences of dealing with reading and writing, of being read to and of dealing with printed materials at home and in kindergarten. They understood the purposes of reading and writing. Teachers' views and attitudes towards early literacy appeared to influence their teaching practices, which, in turn, had an effect on the development of the children's literacy skills. The educational implications of the findings are discussed.

CHAPTER 1: INTRODUCTION

Becoming literate is an essential achievement in the modern world. When children become fluent readers they have access to ideas that can help broaden their minds. Once they can write they are able to make their thoughts concrete, and thereby refine and reflect upon them. Likewise, McLane and McNamee (1990) have argued that reading and writing are ways of making, interpreting, and communicating meaning. Reading is therefore defined as the ability to take meaning from print, and writing as the ability to use print to communicate with others (McLane and McNamee, 1990). It seems that literacy involves not only skills of decoding and encoding, but also ways of constructing and conveying meaning with written language. Learning to master the skills that are necessary to learn how to read and write can be a hard undertaking for children.

Much of the early literacy research has explored ways literacy develops; the skills and knowledge required for attaining literacy; the meaning that literacy holds for children; the strategies used to acquire meta-linguistic ability; the effects of environmental factors, such as school and home background, on young children's literacy development and learning; the implementation of their literacy knowledge to explore the environment (e.g. Clay, 1979; Ferreiro & Teberosky, 1983; Gentry, 1985; Frith, 1985; Bradley & Bryant, 1986; Cunningham & Stanovich, 1990; Goswami & Bryant, 1990; Ehri, 1995).

Reading and writing, particularly in the early years, occupy an important place in the concerns of researchers and educators. Specifically, the development of several areas of knowledge, such as letter knowledge, phonological awareness, and exposure to print, is strongly related to children's literacy acquisition, which in turn is thought to determine their later performance in school (Bradley & Bryant, 1986; Goswami & Bryant, 1990; Treiman, 1993).

Literacy instruction at such an early stage calls for careful planning and development in order to be effective. Several studies (e.g. Hannon, 1995; Riley, 1996; Weinberger, 1996) have stressed that the construction of a literacy curriculum in the early years should primarily focus on the processes and strategies young children use in order to develop their literacy skills, as well as their real world literacy experiences, in order to

introduce them gradually into the literate world. The teacher's role in children's formal literacy learning, especially in the early years, is very important. The effectiveness of teaching practices regarding early literacy depends to a large extent on subject knowledge, the strategies developed to make use of early literacy skills, and on the teacher's views and attitudes towards early literacy (Goodman & Burke, 1982; Riley, 1996). Exposing children to print, and providing opportunities for literacy play in daily activities, are strategies which the kindergarten teacher usually follows to help children make contact with literacy. Halliday (1975) and Clay (1991) have suggested that a stimulating and well-organised learning environment provides a lot of literacy experiences for young children.

However, there have been many debates on the appropriate timing for literacy teaching; specifically, when children are ready to learn reading and writing (Blatchford & Plewis, 1990; Tymms, Merrel & Henderson, 1997; Sharp, 1998). These extended debates are based on international studies regarding children's age and reading readiness, which raised many questions about school starting age and children's academic achievement. Children in England, Scotland and Wales start their formal school literacy instruction at the age of five and at age four in Northern Ireland, which is regarded as early, when compared with other countries where the official starting age is six or seven (e.g., Germany, USA, Indonesia, Sweden, and others).

In Greece, formal schooling starts from the first grade of primary school. Children are accepted into the first grade provided that they have reached their sixth birthday in September, when the school year begins. Prior to this age children are eligible to go to kindergarten (four- and five- years old). Kindergarten is not compulsory in Greece and children do not receive any systematic literacy instruction there. However, in September 1999, new literacy policies were implemented by Government initiatives affecting Greek kindergartens. Due to this change, all kindergarten children will now receive early literacy instruction designed to help them develop their literacy skills at an earlier age. It should be stressed that kindergarteners are not expected to have already developed any skills in literacy on their entry into kindergarten, or to have reached a standard level on their literacy skills by the end of the kindergarten year.

The aim of the present study was to explore the development of literacy amongst children in Greek kindergartens. This work sought to shed light on issues pertaining to young children's literacy development and learning after the implementation of the new literacy policies. Though there is considerable evidence about early literacy development in an English speaking context, there are much less data in the context of the Greek culture and language. Some aspects of literacy might be universal; however, others might be language and culture specific. The differences between the two contexts are expected to yield significant data regarding Greek children's: a) knowledge of the alphabet letters and of the concepts about print; b) skills in phonological awareness and in reading and spelling; c) experiences of and views on literacy both at home and in kindergarten. Moreover, the study aimed to reveal the effects of Greek language, of the informal early literacy instruction received in kindergarten and of other factors such as gender and age on children's literacy acquisition; and to explore teachers' views and teaching practices on literacy and how these relate to children's performance.

The sample of the study consisted of three separate classes from state kindergarten schools in Athens, Greece. A longitudinal correlational design was used in order to study the stability or change in early literacy skills that children developed, the literacy experiences acquired at the point of their entry into kindergarten; how these had changed by the end of the kindergarten year; and the views that children had on literacy. These were also investigated in relation to school environment. This research design was also chosen in order to investigate the time effect on the development of children's literacy experiences and knowledge.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter includes a literature review of theories of literacy development and analyses of the processing involved in reading and spelling as they relate to children's early literacy skills. This is followed by a consideration of published work investigating early literacy teaching with specific reference to the Greek context.

2.2 Defining literacy

There are a range of definitions of 'literacy', the roots of which lie in their different theoretical perspectives. Whitehead (2002) has suggested that most definitions of literacy emphasise the ability to read and write using the conventional system of written signs within a particular language. Other definitions tend to extend this basic notion of literacy to indicate a level of competence, which enables the literate individual to function independently and flexibly. In these terms literacy is not just the main business of schooling, but an act of living and coping in a community (Whitehead, 2002, p.54). Stainthorp (1989) has defined reading as a process of extracting meaning from written text, when the message comes to us through the medium of print. The purpose of reading is to find out what the symbols on the page are meant to convey. Focusing on spelling, Perfetti, Rieben & Fayol (1997) argue that 'spelling is a human literacy ability that reflects language and non-language cognitive processes, or is the use of conventionalised writing systems that encode languages' (Perfetti et al 1997, p.xi). Kress (2000), working from a sociolinguistic perspective of literacy, suggests that 'the (unacknowledged) priority of language in the written form has led to the paradox in which it is asserted that spelling is a system of transliterating sound into graphic form, a move from speech-sound to letter, from speech to writing; the written language is the norm, the stable basis on which speech and spoken forms are mapped' (Kress, 2000, p.18).

The above definitions reflect different perspectives of literacy. The definition of literacy adopted here is informed by the psychological research on the processes that underpin reading. The simple model of reading stated by Gough and Tunmer (1986) is adopted whereby reading is defined as the interaction between decoding skills and language comprehension. There is no parallel simple definition of writing but writing can be considered to be the interaction of spelling and syntactic skills with a message that the writer wishes to communicate.

2.2.1 Reading

In order to understand the development of children's reading and spelling it is necessary to contextualise them within a discussion of research that has sought to identify the processes involved in reading and spelling. This section describes the process of reading and provides evidence that illustrates the importance of reading and of what is related to reading acquisition. Reading is generally viewed as a complex activity. As Huey (1908-1968) said at the turn of the 20th century, 'describing reading is like analysing very many of the most intricate workings of the human mind' (Hoover & Tunmer, 1993, p.1). Anderson, Hiebert, Scott and Wilkinson (1985) further pointed out the complexity of reading by likening it to a symphony orchestra, meaning that reading is a complex organisation of higher mental processes that need orchestration. However, Fries (1963) proposed a simple approach to reading, suggesting that it is merely a reader's response to graphic rather than acoustic signals (Hoover & Tunmer, 1993).

Additionally, Venezky and Calfee (1970) identified two factors that define reading competency: a) overall reading ability as measured by a general reading test and b) the ratio of comprehension of written materials to that of oral materials. Moreover, Perfetti (1977) suggested that in order to understand the development of reading comprehension it is necessary to understand language comprehension and decoding. His suggestion is represented by the following equation: *Reading Comprehension = Language Comprehension + Decoding + X*, where 'X is small relative to the other two factors'. In their study, Gough and Tunmer (1986), developing this equation by Perfetti, proposed an alternative view, arguing that reading equals the product of decoding and comprehension or $R = D \times C$. Moreover, Gough and Juel (1991, p.47) argue that 'the

processes of decoding and comprehension can work both independently and interactively in order to produce skilled reading'. Specifically, they suggest that word decoding and comprehension can contribute independently to reading and simultaneously they correlate (Gough & Juel, 1991). The dissociation between decoding and comprehension (Gough & Tunmer, 1986) is illustrated in the cases of children with hyperlexia (Healy, 1982), who have very good decoding ability, but poor listening comprehension, and of those with phonological dyslexia (Vellutino, 1979) who, in contrast, may have good listening comprehension and poor decoding ability (Gough & Juel, 1991). This shows that when decoding and comprehension dissociate, children appear to have reading problems. However, reading does not involve just decoding and comprehension.

Clay (1966) introduced the term 'emergent literacy' in order to describe the reading and writing behaviours that precede and develop into conventional literacy (Sulzby, 1986). Goodman (1980) has also claimed that 'roots of literacy' develop through living in a world of story books, letters, lists and printed materials; and these experiences initiate children's fascination with print. The transition from emergent literacy to conventional reading is a process in which understanding regresses and advances through many print encounters before the final move into conventional print processing (Riley, 1996a, p.7).

Regarding the existing models that attempt to describe reading development Sulzby (1992) has suggested that the differences found between these models occur from the qualitatively different ways in which a child processes print. Thus, as described, reading is a process that involves both decoding and comprehension of print. These two can work independently and interactively and on these depends the success in reading, on which, in turn, children's later successful school performance depends. It has been argued that the child's early success with the task of learning to read is a major contribution to a positive start to school. Many studies have shown that low academic achievement is linked to low reading ability. Specifically, Bloom (1976) and Perfetti (1976) have asserted that reading ability, as measured by reading comprehension, is highly correlated with school performance in diverse subjects (Riley, 1996a). Related to this issue, Just and Carpenter (1987) have argued in their study that once differences in reading ability occur, schooling does not reduce them. This finding is consonant with the results of some

British longitudinal studies, which indicate that once established, the gap between achievers and non-achievers in reading is maintained or widens throughout primary schooling (Mortimore et al., 1988; Tizard et al., 1988). Nevertheless, Lundberg et al.'s study (1988) suggests that the development of reading and spelling difficulties in school can be prevented when a carefully designed pre-school programme initiates the development of children's phonological awareness at high levels.

A major question posed throughout research regarding early literacy is what knowledge-sources, skills and experiences enable children to begin reading words by processing graphic cues without any help from pictures or other context cues. According to some studies (Goodman & Goodman, 1974; Harste, Burke & Woodward, 1982), this could be explained by the view that this ability emerges naturally out of children's literacy experiences as the oral language develops (Ehri, 1991). As Ehri (1991) suggested, 'even at this early stage children become able to identify print in their environment, which is the foundation for learning about the graphic system' (Ehri, 1991, p. 60). She also added that 'the repeated exposure to environmental labels and signs leads to the decontextualisation of print and to its recognition solely from graphic cues' (Ehri, 1991, p.61). However, a body of research (Fox & Routh, 1975; Liberman & Shankweiler, 1979; Morais et al., 1979; Bradley & Bryant, 1983; Ehri, 1983) suggests another explanation for this by arguing that before children begin to process any graphic cues in order to read words, they must acquire certain prerequisites, such as letter knowledge and phonemic awareness.

Mason (1980) has argued that having yet to acquire this knowledge, children's reading is not reading *per se*, but reading of the environment; therefore, in order to shift reading the environmental cues to reading print itself, pre-readers must first learn the alphabet and the letter-sound mappings. Ehri (1991, p. 61) suggests that reading does not emerge naturally as a result of print exposure; by contrast, children need to be taught that the letterforms correspond to sounds, and that the sounds are folded into adjacent sounds, which are hard to distinguish as units. Knowing these, children are able to read words and text independently (Ehri, 1991). This view is also shared by Stuart and Coltheart (1988), who stress the significance of phonemic awareness, suggesting that good ability to manipulate the phonemic segments of speech and good knowledge of letter-sound

correspondences can help children to begin to construct an orthographic lexicon, without having any previous experience of printed words. This means that they are able to crack a word's code. Then what they need is to understand that spoken words can be written down. Thus, a child who knows the phonemic representation of a word, and the letters that map onto its sounds, is able to crack the code of the word and graphically represent it. Byrne and Fielding-Barnsley (1991, p. 455), in a study evaluating a programme of teaching phonemic awareness to young children, concluded that 'for children of four to five years of age, both letter-sound knowledge and phonemic awareness need to be established for acquisition of the alphabetic principle to take place'. This suggestion reaffirms the significance of phonemic awareness shown in a body of research investigations over the decades, and its link with letter-sound awareness in developing reading skills.

Regarding children's learning to read through teaching that stresses letter-sound correspondence and their use in reading and spelling (namely, phonics instruction), in the United States, the National Reading Panel Report (2000) examining the research evidence concerning phonics instruction for reading beginners found that systematic phonics has a large effect on children's reading achievement scores in contrast to less systematic and non-phonics programmes (including basal programmes, whole-word programmes and whole-language approaches). Moreover, it was found that phonics instruction was significantly beneficial for students in kindergarten through 6th grade, and for children who have difficulty in learning to read. Furthermore, in cases with first graders, apart from enhancing their decoding abilities, it was found that there was significant improvement in their ability to comprehend text. Nevertheless, no significant effect of phonics instruction was found on older children's text comprehension. Thus, according to the National Reading Panel, the effects of systematic instruction on teaching children to associate the letters with the sounds they represent were significant and considerable in kindergarten and 1st grade, suggesting also that systematic phonics instruction should be integrated in those years' curricula. However, the Panel stressed that it is very important for the effectiveness of a phonics instruction programme to ensure that children understand the purpose of learning letter sounds, and that they have the ability to use these skills with accuracy and fluency in their reading and writing tasks.

The role of the teacher seems also to be of high priority, since the successful outcomes of the instructional programme depend on effective and creative teaching, and on the decision of the most appropriate programme for their classroom (NRPR, 2000).

However, an alternative view by Wagner, Torgesen and Rashotte (1994) indicates that young children may acquire the phonological structure of oral language as a by-product of learning written language (e.g. learning the spelling of *fight* and *light* teaches the child that their spoken forms share common sounds). Ehri (1984, 1987), Morais (1991), Morais et al. (1979; 1987) and Read et al. (1986) propose that learning to read and spell facilitates an awareness of the phonological structure of oral language. Particularly, Ehri (1989) suggests that learning to read and spell facilitates phonological awareness rather than reverse, and Tunmer (1991) has argued that measures of phonological awareness could be considered as indirect measures of reading achievement (Wagner et al., 1994, p. 74). The point made through these findings is that children can learn the phonological structure of the oral language and how to manipulate the speech segments with implicit phonics teaching. Nevertheless, Stuart and Coltheart (1988) concluded in their study that phonological awareness could be developed without any special training or learning to read. According to them, this finding was supported by the results of Morais et al.'s (1979) and Read et al.'s (1986) studies. Specifically, it emerged that in all three studies, some of those participants who had not been reading and who were therefore illiterate or pre-literate, seemed to have some success on the phonemic segmentation tasks, which suggests that phonological awareness skills can be developed independently of reading (Stuart & Coltheart 1988).

Letter knowledge, phonological awareness, and concepts about print are considered to be bottom-up processes of literacy acquisition, whereas the meaning that literacy has for kindergarteners is a top-down approach. 'Bottom-up' theories propose a sub-skills approach, which suggests that reading is learned initially by manipulating the smallest units of language (i.e. letters, words). Top-down theories suggest that the search for meaning is central from the outset, and that the main strategies for decoding words are prediction and guessing (Smith, 1971; 1978; Goodman, 1976; Goodman and Goodman, 1979). Stanovich (2000) further proposes a third model of reading, the interactive-compensatory model. He argues that interactive models assume that several knowledge

sources simultaneously provide information and construct a pattern; the compensatory assumption states that if there is a deficit in any of these knowledge sources, heavier reliance on other knowledge sources will be made, regardless of their level in the processing hierarchy. According to him, a reader who has poor word analysis skills might possibly depend more on the contextual factors in order to read (Stanovich, 2000, p.41). Comparing good and poor readers, Stanovich (2000, p.42) further suggests that the former appears to be superior at comprehending and remembering large units of text, at context free word recognition, and moreover can identify words automatically and rapidly, whether by direct visual recognition or phonological recoding; by contrast, the latter perform less efficiently on all these (Stanovich, 2000).

2.2.2 Spelling

This section describes spelling and its relation to reading as well as the effect of the orthography on children's spelling acquisition. There are two major theoretical approaches concerning spelling acquisition in the English language that explain spelling development. One approach concerns the models which propose that children pass through a series of qualitatively different stages. During the early stages, children draw on their knowledge of letter names and their knowledge of phonology in order to spell words, while later on they use their knowledge of orthographic patterns and the morphological relationships among words (Gentry, 1982; Henderson, 1985; Ehri, 1986). Thus, these theories suggest that at different stages of spelling development, children use qualitatively different types of information. The other approach proposes that children use a variety of spelling strategies and different types of information from the beginning. This is supported by a number of studies which have shown that even young children, who are spelling beginners, can use more sophisticated strategies when spelling (Treiman, 1993; Treiman, Cassar & Zukowski, 1994; Varnhagen, McCallum & Burstow, 1997). Regarding this, Frith (1978) has argued that 'reading 'by eye' is the method of preference at all stages of reading acquisition and at all levels of reading ability' (Frith, 1980, p. 512). Moreover, Frith's suggestion indicates that spelling is phonologically mediated in contrast to reading. Nevertheless, Varnhagen, McCallum and Burstow (1997) further argue that stage theories of children's spelling may even provide an incorrect

characterisation of children's spelling. Further proponents of the stage theories argue that at each developmental stage there is a consistency among a child's spellings, e.g. within letter-name stage, children should spell *car* as *cr*, using their knowledge of letter names. However, studies conducted to investigate this did not always find it (Treiman, 1994; Varnhagen, McCallum, Burstow, Pawlik & Poon, 1997).

It has been observed that skilled readers make more mistakes in spelling than in reading; their skills in reading and spelling diverge soon after they start receiving formal instruction (Mommers, 1987; Seymour & Porpodas, 1980). Frith (1980) has suggested that 'there are such people who have not a trace of reading difficulties but are seriously handicapped by their inability to spell' (Frith, 1980, p. 496). The asymmetry between reading and spelling raises questions of how these two are related.

Regarding the relation between reading and spelling, Malmquist (1958) reviewed several large scale studies and found that moderate to high correlations between scores on reading and spelling tests suggest a fairly tight relationship (Frith, 1980). Based on this, Ehri (1980, 1997) and Gough, Juel and Griffith (1992) placed an emphasis on the similarities between reading and spelling and claimed that the processes and representations underlying reading and spelling are in fact the same. Nevertheless, others (e.g. Bryant & Bradley, 1980; Frith, 1980) suggest that reading and spelling are two distinct processes with many differences. Additionally, Read (1981) supports what Bryant and Bradley (1980), and Frith (1980) have suggested regarding the dissimilar processes followed in reading and spelling, by postulating the cases of children who attempt to write (e.g. words, sentences or texts), and are often not able to read their own 'invented' spellings (Bosman and Van Orden, 1997). However, the vast array of studies (e.g. Liberman, 1971; Fox and Routh, 1975; Stanovich, 1986; Lundberg et al., 1988; Adams, 1990) supposedly investigating the relation between reading and phonology attainment contradict Frith's suggestion by showing the importance of phonology as one of the prerequisites of reading acquisition and suggesting that children who do not have great sound awareness fail to learn how to read successfully.

Related to the above are the results from a study by Morris and Perney (1984), who tested first graders' ability to invent spellings of words before they received any formal literacy instruction. Their findings indicated that the vast majority of children had

a very good knowledge of the alphabet; however, only 9% of them were able to spell a few words correctly. Moreover, regarding the relation between spelling and reading, high correlation was found between ‘invented spellings’ at the beginning of the year and reading achievement scores at the end of the school year. Ehri (1997), commenting on the suggested correlation between invented spellings and reading, gives a possible explanation by saying that the ‘invented spellings’ reflect children’s knowledge of the spelling system that determines how quickly they get off the ground and make progress in learning to read’ (Ehri, 1997, p. 259). Furthermore, a study of kindergarteners by Ehri and Wilce (1987b) was conducted in order to examine the effects of spelling-training on word-reading. Their findings revealed that spelling-trained participants learned to read significantly more words than control participants. These findings suggest that spelling instruction improved the participants’ working knowledge of the alphabetic system and this, in turn, helped them to form more complete grapheme-phoneme connections to remember how to read the words. Furthermore, the instruction they received enhanced their ability to learn how to read a set of words with practice, but not their ability to decode unfamiliar words, because children were not taught how to assemble and blend graphemes into phonemes (Ehri and Wilce, 1987b). In contrast to what Ehri and Wilce found in their study, Uhry and Shepherd (1993) conducted a spelling instruction study in first-grade classrooms and found that there was an effect on both decoding and word learning. What emerges from their study suggests that spelling instruction can facilitate decoding ability and specific-word reading, only if it is structured to improve blending ability.

Regarding the relationship between reading and spelling, Clay (1993) argues that ‘in the first year of school there is probably a high degree of interdependence between reading words and writing words’ (p.59). However, she adds that it should not be assumed that success in early reading is guaranteed by teaching children how to write words (Clay, 1993). Nevertheless, reading and spelling acquisition does not only depend on children’s training on the prerequisites in literacy, namely phonological awareness, letter knowledge and concepts about print. It has been suggested that also children’s experiences of print have a great influence on their literacy development (e.g. Stanovich

& West, 1989; Cunningham & Stanovich, 1990, 1991; Stanovich, 1993; Stanovich & Cunningham, 1992).

In English orthography, there are generally more spellings for a particular word than possible readings e.g. the phoneme [i:] can be found as 'ee', 'ey', 'y', 'ea' and 'ie'. However, this characteristic is not restricted to English; other alphabetic orthographies such as Dutch, French, German, and Spanish are more inconsistent in their phoneme-to-grapheme relations than in their grapheme-to-phoneme relations (Bosman and Van Orden, 1997). This is also evident in the Greek language, which is also an alphabetic orthography. Aidinis and Nunes (2001) have suggested that 'spelling is not always predictable from phonology in Greek but it becomes more predictable when conditional rules based on morphology are considered though some difficulties still remain' (Aidinis and Nunes, 2001, p.151). As in English, the phoneme [i:] in Greek can be spelled in five different ways (as ι, η, υ, ει, οι, υι), depending on whether it is a suffix and refers to neutral singular nouns (-ι); to feminine singular nouns and adjectives (-η); to masculine plural nouns and adjectives (-οι); or to the third person singular active verbs (-ει) in one conjugation.

As shown above, in contrast to the high orthographic regularity for reading, Greek has some irregularity for spelling. As Harris and Giannouli (1999) have argued, one reason for this is that the written form of Greek has remained the same from antiquity, even though the spoken form has changed significantly. Modern Greek spelling thus tends to reflect the phonetic etymology of words rather than their present spoken form. A major difference between reading and spelling in Greek lies in the representation of vowels. Consonants have one graphemic rendition, regardless of the context in which they occur, whereas three out of five Greek vowels have two or more possible spellings. The sound /i/ has six different graphemic renditions; the sound /e/ has two ε and αι; the sound /o/ has also two ο and ω. The number of different alternatives often makes the choice of the correct spelling for a word difficult, particularly since most of Greek words are multi-syllabic and have many vowels. However, the choice of a vowel's spelling is not arbitrary; it is determined by the morphological rules as well as by phonology. Nevertheless, there are some Greek words that have exceptional spelling patterns, and have to be learnt by rote. Thus, 'in order to become a competent speller in Greek, one

needs to have knowledge of grapheme-phoneme relationships, the assimilation of morphological and spelling rules, and the rote learning of exceptional words' (Harris & Giannouli, 1999, p.54).

The asymmetry in the orthographic regularity of reading and writing, which is also evident in the Greek language, suggests that learning to read will be much easier than learning to spell. Previous studies of learning to read and spell in regular and irregular orthographies indicate that children will progress in reading more rapidly in Italian (Cossu et al., 1988) than in spelling, which will be slower, as in English (Thorstad, 1991). Porpodas (1991), in one of his studies with Greek first and second graders, investigated their reading and spelling performance. The results of this study indicated that for both grades, and for both regular and exceptional words, spelling was more erroneous than reading.

Comparing reading and spelling Bosman and Van Orden (1997) suggest that 'generally spelling is more difficult than reading' (p.183). Their suggestion is based on the fact that there is an inconsistency in phoneme-letter relations, which is not found in letter-phoneme relations, and this inconsistency must be resolved by the relatively weak semantic-letter dynamic. Bosman and Van Orden used the term 'semantic-letter dynamic' to describe the relation between a word's meaning and its correct spelling and 'semantic-phoneme dynamic' to describe the relation between a word's meaning and its correct pronunciation. In reading the semantic-letter dynamic is much stronger, so the letter-phoneme inconsistencies are resolved more easily than in spelling. Thus, in order for children to have the same level in reading and spelling, it is necessary for them to build a stronger meaning-spelling dynamic, or to deal with a language with more consistent phoneme-letter relations (Bosman and Van Orden, 1997).

Although spelling in Greek is more difficult than reading, it appears that learning to spell in Greek is easier than learning to spell in English. According to the orthographic depth hypothesis (Katz & Frost, 1992), the Greek orthographic system is considered 'shallow' in contrast to the English that it is 'deep'. This means that in Greek letters or groups of letters map relatively consistently on to sounds. Conversely, in English the relationship between letters and sounds is often equivocal. Similarly to reading, in Greek spelling, the sounds map relatively consistently on to letters. Regardless of the

morphological rules needed for correct spelling, a word's sounds can be graphemically represented.

2.3 Early Literacy Development

Literacy often begins before children go to school and before they manage to master the technical skills that are necessary for learning to read and write. Neuman and Roskos (1993) present a general approach to literacy, suggesting that very early oral language development is more noticeable (seen in children's gesturing and make-believe play), whereas writing development is much less clear. Later on, writing development becomes more apparent as it approaches more conventional forms, while the subtleties of the oral language that continues to develop cannot be easily detected (Neuman & Roskos, 1993).

From a socio-psychological perspective, McLane and McNamee (1990, p.7) argue that 'the development of literacy is a profoundly social process embedded in social relationships. It begins in children's relationships with their immediate caretakers and is expressed and elaborated in increasingly wider communities, such as neighbourhood and school'. Their suggestion focuses more on the effect that the context has on children's literacy development, and how the context is likely to cause considerable variation in patterns of early literacy development, due to the different ways that literacy is organised in each context. However, Stainthorp and Hughes (1999) describe literacy development based specifically on the processes and the skills required, arguing that 'when children begin to learn reading and writing, they already have considerably developed language skills. At the start of the process their decoding skills are at zero and, therefore, they cannot read. Learning to decode, and then subsequently to automatically recognise a large vocabulary, is what learning to read is all about' (Stainthorp & Hughes, 1999, p.11).

All the existing evidence about early literacy as described above shows that learning to read and spell is a developmental process. Focusing on this evidence, models have been built up describing the process through which children develop their reading and spelling skills, and these are presented below.

2.3.1 Developmental theories about reading

There are three main models of reading development that have been built up on the basis of empirical evidence about children's early reading performance. These are by Marsh, Friedman, Welch and Desberg (1981) (Figure 2.1), Frith (1985) (Figure 2.2) and Ehri (1995) (Figure 2.3). In addition Seymour (1984) has made adaptations to Marsh et al's work. They have a number of things in common, but they also have differences. The commonalities lie in the basic characteristics ascribed to each level of reading development by the researchers and in the way they conceptualise children's reading development. However, each model also differs from the others regarding the labels given to each stage (though not always) and some unique features that each model has. This section focuses on the description of the levels of reading development as presented by all three models. All three models were developed from evidence on English speaking children.

Marsh et al. (1981) propose that the first stage of reading development (Figure 2.1) is the 'linguistic substitution' stage, where when a child is presented with an unfamiliar word in isolation s/he has no strategy for working it out. However, in a known linguistic context s/he will guess using semantics and syntax but not graphic features. (MacKinnon & Waller, 1988, p.203). However, Seymour (Seymour & McGregor, 1984), describing also how literacy develops, suggested that in the initial stage that he calls logographic, visual discriminations are established between words from a limited sight vocabulary. According to Marsh et al.'s model the child moves from wild guessing through to using rudimentary letter-sound correspondences (discrimination net substitution stage) to eventually being able to decode regular words accurately (sequential decoding stage). Eventually higher order decoding rules are used so that irregular words can also be read accurately, particularly when supported by context (hierarchical decoding stage).

2.3.1.1 Marsh, Friedman, Welch and Desberg's reading development model

Task	Proposed stages of Reading Acquisition	
	Strategy	Example
	Stage one: Linguistic Substitution	
Known word	Rote	See boy; read <i>boy</i>
Unknown word in isolation	--	See cime; read don't know
Unknown word in context	Linguistic guess	See the cime went to the store; read the boy etc.
	Stage two: Discrimination net Substitution	
Known word	Rote	See boy; read boy
Unknown word in isolation	Guess based on visual similarity	See cime; read cat
Unknown word in context	Guess based on linguistic and visual cues	See cime etc.; read the child etc.
	Stage three: Sequential Decoding	
Known word	Rote or decode	See boy; read boy
Unknown word in isolation or in context	Decode left to right	See cime; read kime
	Stage four: Hierarchical Decoding	
Known word	Rote	See boy; read boy
	Decode	
Unknown word in isolation or in context	Decode using higher order rules Analogy (alternative strategy)	See cime; read sim See faugh; read: faff by analogy to laugh

Figure 2.1: Marsh, Friedman, Welch & Desberg reading development model (1981)

2.3.1.2 Frith's reading development model

The six-step model of skills in Reading and in Writing Acquisition¹

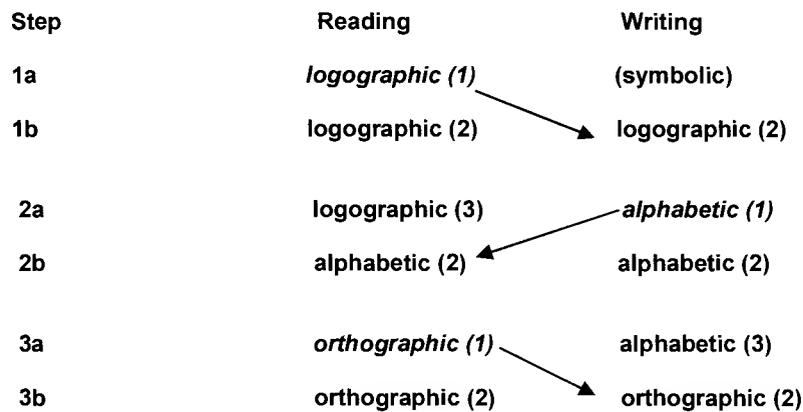


Figure 2.2: Frith's model of reading and writing development (strategies acting as 'pace makers' are in italics)

The first stage of Frith's (1985) model (Fig. 2.2) is called 'logographic' rather than one of linguistic substitution. She argues that in case of unfamiliar words children use contextual and pragmatic cues to recognise them. However, she also suggests that regarding familiar words, children are able to recognise them instantly using distinctive graphic features, while the letter order is ignored and phonology is secondary. The child pronounces the word after s/he identifies it. Movement into using decoding as a strategy Frith claims, arises initially in spelling, whereby the child begins to map the sound-letter relationships when attempting to write. Through this, the decoding strategy becomes available for word reading (alphabetic stage). At this stage words will be read as if they were always regular. Eventually the child will begin to gain knowledge of the higher orthographic units and so use these regularities to work out unknown words for reading and to begin to spell using orthographic units rather than simple letter-sound correspondences (orthographic stage).

¹ Frith (1979) argued that writing and reading skills sometimes show dissociations in development. She put forward the hypothesis that normal reading and writing development proceeds out of step. Each phase is divided into two steps with either reading or writing as the pacemaker of the strategy that identifies the phase. The division in to steps also allows a differentiation in terms of level of skill in a particular strategy, here symbolised by number subscripts. Level 1 would imply that the skill is present in a very basic form only; level 2 that is more advanced and so on (Patterson, Marshall & Coltheart, 1985, p.310)

This model has a degree of consistency with that of Marsh et al (1981) except that she includes spelling and sees spelling as being instrumental in reading progress. She also focuses more directly on alphabetic knowledge and on the importance of cracking the alphabetic code. Also, Frith’s suggestion that at the alphabetic stage children decode words grapheme by grapheme and are able to pronounce both unfamiliar and nonsense words appears not to be necessarily correct in English, because of the complex orthography. However, in transparent orthographies, such as Greek, there will be a higher level of accuracy.

2.3.1.3 Ehri’s reading development model

Developmental Phases of Reading and Spelling	
Reading	Spelling
1. Pre-alphabetic/Logographic	1. Precommunicative
2. Partial alphabetic	2. Semiphonetic, letter name
3. Full alphabetic	3. Phonetic, phonemic
4. Consolidated alphabetic orthographic	4. Transitional, morphemic within word pattern

Figure 2.3: Ehri’s developmental model of reading and spelling

The first phase in Ehri’s (1995,1997) model of reading (Fig. 2.3) is the one where children try to remember how to read words by forming connections between the visual attributes of the words they are presented with and the pronunciations or meanings of these words (pre-alphabetic). Children move from this phase through using rudimentary letter-sound correspondences (partial alphabetic phase) to eventually using a complete decoding strategy and regularities to work out unknown words (full alphabetic phase). Eventually children are able to operate with multi-letter units which correspond to the same phoneme blend, and gradually they build up their knowledge of language’s orthography resulting in becoming fluent readers (consolidated alphabetic, orthographic phase). She, therefore, seems to focus on decoding at an earlier stage than Marsh et al’s and Frith’s models. She calls the first phase ‘pre-alphabetic’ because she argues that it

cannot be said to be real reading since letter-sound connections are not involved. Marsh et al (1981) and Frith (1985) on the other hand, consider logographic stage as the initial stage of beginning to acquire reading and the basis for developing literacy. Like Ehri, Stuart and Coltheart (1988) postulate that the logographic stage is not necessary. Specifically, they argued that 'phonologically able and knowledgeable children (these who can do phonemic segmentation and who know letter-sounds) do not begin reading logographically' (Stuart & Coltheart, 1988, p.170).

Frith's (1985) description of the logographic phase of reading (Fig. 2.2) seems to cover the first two stages of Marsh et al's model. Frith wishes to make a clear distinction between the logographic strategy, which does not include the use of phonology, and the orthographic strategy, which strongly depends upon the prior establishment of phonological decoding. If Marsh et al's rote learning strategy was adopted in understanding reading development, Frith's distinction would not be identified.

Frith's and Ehri's models seem to be similar regarding the features ascribed to the second stage of reading development, though Ehri claims that children have not yet reached the alphabetic stage. Also, both of them make a reference in their models to spelling. However, unlike Frith, Ehri does not believe that spelling is instrumental in reading progress. Additionally, Frith's and Ehri's models seem to agree with Seymour's (1984) description of the second stage of literacy development, who also argues that children make use of single letter-sound and sound-letter correspondences to work out new words (alphabetic stage)(Seymour & McGregor, 1984). Specifically, Ehri places a great emphasis in her model on the use of letter-sound correspondences and its importance in word decoding. Similarities were also found between Frith's and Seymour's models in relation to the description and the labelling of the third stage of reading development (i.e. orthographic).

Comparing Marsh et al's model to Frith's model it was found that Marsh et al speak of letter-sound translation, and Frith speaks of letter-sound correspondence; the former is about delivering five correspondences in the word e.g. 'chain' → /k/ /h/ /æ/ /i/ /n/, and the latter is about delivering three correspondences 'chain' → /tʃ/ /eɪ/ /n/. In the first case it is unlikely to be read correctly, whereas in the second there is an excellent chance of reading it correctly. The fact is that Frith considers a 'grapheme' to be a group

of letters ‘that need to be taken together in order to map onto a single phoneme’ (Stuart & Coltheart, 1988, p.143). However, this implies that in her alphabetic strategy the child uses grapheme (units of letters)-phoneme correspondences and not letter (single letter)-sound correspondences.

Also, Frith’s (1985) suggestion that at the final stage the child relies less on pre-lexical phonological decoding is supported by Doctor and Coltheart (1980), who earlier argued that ‘adult skilled readers read predominantly by direct word recognition rather than by translation from print to sound’ (Stuart & Coltheart, 1988, p.144). However, while Frith proposes that phonological decoding is not required at the orthographic stage, she suggests that children cannot reach it without having first attained the alphabetic strategy, where phonological decoding is dominant. Further, Stainthorp and Hughes (1999), commenting on Frith’s and Ehri’s descriptions of reading, argue that Ehri’s view implies the existence of levels of reading, whereas Frith’s model implies the existence of stages in reading development. Regarding the models describing reading development, Goswami (1993) has suggested that reading should be considered as an interactive developmental process and not as a series of stages (Goswami, 1993).

Frith (1985) has further argued that when the sequence of print processing, as described, is complete, integration of all strategies lead to reading fluency. As Riley (1996b, p. 91), says ‘the developing reader is processing print in more and more refined and efficient ways’, and she adds that a young reader uses all the strategies available; these may be contextual, semantic and syntactic cues, as well as orthographic and phonological. Clay (1991) describes the use of integrated strategies in order to become a fluent reader as construction of inner control.

Each one of the above models describes the basic cognitive processes that are necessary for children’s reading skills to develop. Though these models label each developmental stage/phase in different way, though not always, due to their focus on particular features thought to be characteristic at each stage/phase according to each model, they are similar in the way they conceptualise children’s reading development. As Stainthorp and Hughes (1999, p.14) suggest, ‘all models seem to converge on the need to develop decoding skills based on linking phonological awareness to the alphabet, and

building up fast and accurate sight vocabulary, in terms of understanding what and why children need to be taught to become fluent readers’.

The existing developmental models refer to the English language. However, it appears that there are no theories describing literacy development in Greek. Nevertheless, Porpodas (2001) investigating the reading and spelling ability of Greek first graders who were found to be either good or poor readers after six months of instruction, suggested that regardless of their reading ability they did not appear to use the logographic strategy but rather the alphabetic (Porpodas, 2002). This finding supports Stuart and Coltheart’s (1988) suggestion that logographic stage is not necessary and contradicts Marsh et al.’s (1981) and Frith’s (1985) argument that logographic is the initial stage of reading development. Hence, there is evidence that Greek children use predominantly the alphabetic strategy in order to read. It appears that the Greek transparent orthography and the teaching programme that is based on phonics in the first grade favour the use of the alphabetic strategy (Porpodas, 2002).

Achievement of decoding would seem to be based on letter knowledge, phoneme awareness, and on the ability to map these two. These models identify these two sets of knowledge, plus the processes of mapping, as being precursors of reading in English. It therefore seems likely that they are also important in a highly transparent orthography such as Greek, and that Greek children learn these mappings with greater ease. The present study will only be considering children who are likely to be in the very early stages.

2.3.2 Developmental theories about spelling

In addition to these mappings of word reading into models of spelling as Frith and Ehri have done, there are models of spelling in their own right. Stage theorists propose that ‘children pass through a series of qualitatively different stages in the course of learning to spell. During the early stages of spelling development, children draw on their knowledge of letter names and their knowledge of phonology in order to spell words. Later on, knowledge of orthographic patterns and morphological relationships among words come into play’ (Treiman, 1998, p.292).

A description of the developmental stages of spelling is made to identify the operations performed and the cues used in order for children to attain spelling. Four models of children's writing or spelling development are also going to be described and discussed. These are by Gentry (1982), Henderson (1985), Frith (1985) and Ehri (1986), in order to highlight the differences and commonalities among them.

2.3.2.1 Gentry's spelling development model

In Gentry's (1982) model of spelling development the first stage is the 'precommunicative', where the child makes scribbles, but also uses random letter-strings that might be numbers or letter-like marks, and thus begins to realise that letterforms can be used to represent sounds. Children move from this stage through decoding some of the phonetic segments of a word by applying the letter-name strategy (semiphonetic stage) to decoding, where omissions no longer occur, but still the letter-name strategy is used (phonetic stage). After becoming aware of the conventional spellings and using also visual and morphological rules when they spell, with letter name strategy no longer being in use, (transitional stage) children move to eventually mastering the majority of spellings and establishing the orthographic system (correct stage) (Treiman & Cassar, 1997; Stainthorp and Hughes, 1999).

2.3.2.2 Henderson's spelling development model

Henderson (1985) in his spelling development model argues that at the first stage (preliterate writing), unlike Gentry, children are not aware that writing represents speech. The children move from this stage through becoming aware of the letter-sounds and the letter-names (letter-name spelling stage) to eventually learning words by sight through their reading and to realising the use of frequent letter patterns that correspond to sequences of sounds (within-word pattern stage). Then, the next stage is the syllable juncture stage where children understand the importance of the use of morphological rules. Eventually, children start to distinguish similar spelling patterns the sounds of which vary and explore spelling relations among words in terms of roots, origins and meanings (derivational principles stage) (Treiman & Cassar, 1997).

2.3.2.3 Frith's spelling development model

As discussed above, Frith (1985) proposes a 'symbolic' stage in writing as a possible tentative stage which may precede the 'logographic' stage (Fig. 2.2). Following the same terminology as in reading, she argues that spelling at this early stage is restricted just to the rote learning of a few words. According to her model children move from the rote learning to decoding and using sound-letter correspondences to work out a word (alphabetic stage). Then the final stage is that where children use precise orthographic representations. At that point spelling becomes independent of sound and lexical analogies are used (orthographic).

2.3.2.4 Ehri's spelling development model

Ehri's (1986) description of the orthographic knowledge begins with the 'semiphonetic' phase, where children attempt to write words (Fig. 2.3). Then they move to symbolising the entire sound structure of a word without considering whether the letter sequence or other conventions are acceptable (phonetic phase). The main strategy at this phase is the use of sound-letter correspondences. Eventually children become aware of a number of regularities leading to the correct spellings of many words (morphemic phase). Assigning just letters to the sounds of a word children hear can lead to many spellings e.g. 'plait', 'pleat' for 'plate'. This may refer more to the English language than to Greek, because there are so many more sounds than letters. By contrast, in the Greek language there is a closer ratio of sounds to letters.

Comparing Gentry's and Ehri's models it is suggested that, although Ehri agrees that young children have some primitive notions about writing (precommunicative period), in contrast to Gentry, she considers children's first attempts to write words as the starting point (Treiman, 1993). Gentry (1982) also does not specify in his model which segments tend to be omitted in semiphonetic spelling. However, other investigators (e.g. Ehri, 1986; Morris & Perney, 1984) imply that vowels in the middles of words and word-final consonants are particularly susceptible to omission e.g. *mail* spelt as *m or ml* (Treiman, 1993, p. 29). Additionally, both Henderson (1985) and Gentry (1982) suggest the use of letter-name strategy in the early stages of spelling development (e.g. 'ms')

represents the word 'mess' with the letter 's' standing for its name /es/) (Treiman & Cassar, 1997). Here we see some of the problems of attempting to provide an account of spelling development based on one language. The letter names in Greek are much more complex, so children do not have the same opportunity to use letter names as substitutes for segments of word. However, there are some Greek letter names that are exceptions. This issue is discussed further in the section of letter knowledge below.

Varnhagen, McCallum and Burstow (1997, p.456) suggest that 'all stage theories share common features such as indicating qualitatively different skills and knowledge at the different stages, as well as describing spelling development in terms of transition from relying on phonological properties of words to recognising and representing orthographic and morphemic regularities and rules'. However, they argue that stage theories of children's spelling are untenable, and may even provide an incorrect characterisation of children's spelling. Characterising a speller as being in the phonological stage may provide a limited description of his/her phonological understanding and strategies that s/he might have, providing an incorrect description of the child as having no other understanding of the English writing system (p.458). Thus, a child may use one or more strategies within one stage. Treiman (1993) has pointed out that it is more important to understand how children recognise and represent morphemes e.g. in past tense words, in affixed and compound words, than it is classifying their strategy use across all these word types as phonetic, orthographic, or morphemic in nature. Concentration on this will facilitate making an accurate description of the spelling development.

After investigating young children's reading and spelling development and making an overview of some of the existing models it was Ehri's work that was chosen to provide the framework of the present thesis. The reason for this is that Ehri places a great emphasis on the use of decoding strategy and on the use of letter-to-sound and sound-to-letter correspondences to work out new words in reading and spelling respectively. Ehri suggests in her model that phonology appears in children's word reading and in their spellings very early in contrast to the other models described. She argues that phonology is the basis from where children move to become aware of orthographic and morphemic

regularities and rules. These seem to fit well with the definition of reading and writing adopted in this thesis.

2.4 Prerequisites for early literacy acquisition

In the light of the models of literacy development it is necessary to consider how research has identified what knowledge is necessary for children to begin the process of learning to read and spell.

2.4.1 Phonological awareness

Phonological awareness is thought to be an important prerequisite of reading and spelling. Goswami and Bryant (1990, p.2) defined phonological awareness as ‘children’s awareness of sounds; their sensitivity to the constituent sounds in words’. Stainthorp and Hughes (1999, p.64) suggest that phonological awareness ‘denotes a meta-cognitive skill involving the phonological system. It describes the ability to be sensitive specifically to the phonemic structure of words and the facility to manipulate those phonemes’. According to Brennan and Ireson (1997, p. 241) ‘phonological awareness consists of various phonological abilities or insights, such as the word length in acoustic duration, or the awareness of the distinctive sounds of a word’.

2.4.1.1 Phonological awareness and learning to read and spell

As we saw above, theories of literacy acquisition place an emphasis on the role of phonological abilities (e.g. Frith, 1985; Ehri, 1995), because phonological awareness is necessary for connecting sound to print. Studies on literacy acquisition have considered whether phonological awareness is a necessary precursor to, or a result of, reading in an alphabetic script. Studies by Morais, Bertelson, Cary and Alegria (1979,1986) and Read, Yun-Fei, Hong-Yin and Bao-Qing (1986) have shown that phonemic segmentation ability, which is a measure of phonemic awareness, is not acquired naturally in the absence of an alphabetic system (e.g. Morais, et al., 1986; Read et al., 1986; Stuart & Coltheart, 1988). Specifically, Morais et al (1979,1986) concluded in their study with illiterate Portuguese adults that they had difficulty in adding and deleting phonemes

compared with adults who had learnt reading in adult literacy programmes. Read et al. (1986) support Morais et al's findings. They found in their study that Chinese adults who had not been introduced to the pinyin (alphabetic script) when they went to school scored lower on tasks of adding and deleting of phonemes than those who had. These findings suggest that PA cannot exist outside reading. Furthermore, Wagner, Torgesen and Rashotte (1994) have suggested that a child may acquire an explicit awareness of aspects of the sound structure of oral language as a by-product of learning written language e.g., learning the spelling of *cat* and *rat* may make a child aware that the spoken forms of *cat* and *rat* have sounds in common. Additionally, Ehri (1989) consonant with Wagner et al (1994) has argued that learning to read and spell facilitates phonological awareness rather than reverse, and Tunmer (1991) has even suggested that measures of phonological awareness might better be thought of as indirect measures of reading achievement (Wagner et al, 1994, p.74). Also, relative to this view might be the results of Bowey's and Patel's (1988) study. They concluded that children's general language abilities was the most important variable in their testing when measured by the two linguistic tests (vocabulary (PPVT-Peabody Picture Vocabulary Test) and a sentence imitation test (a subtest of TOLD-P (Test of Language Development-Primary) and that this factor controlled children's rhyming and syntactic abilities as well as their success in reading (Bryant et al, 1990).

However, others (e.g. Liberman et al, 1977; Bradley and Bryant, 1983,1985; Bryant et al, 1990) support the view that an alphabetic writing system depends on developing awareness of speech segments, and specifically phonemes. The knowledge of sounds and phonological skills, such as rhyming and alliteration, may have been developed in preliterate children, and may also be good predictors of later reading achievement. Bradley and Bryant (1983, p.419) argued that 'children who are backward in reading are strikingly insensitive to rhyme and alliteration'. Research findings (e.g. Liberman, 1971; Fox & Routh, 1975; Ferreiro & Teberosky, 1982; Mann & Liberman, 1984; Stanovich, 1986; Adams, 1990) have indicated that those children who generally do not appear to make significant progress in awareness of the sound structure of language in the early years begin to fall behind in their reading progress. Bradley and Bryant's (1983) study was the first one in the English language that presented empirical

evidence of the causal relation between reading and phonological awareness, indicating specifically that children's awareness of rhyme and alliteration before schooling, which might result from their home experiences, strongly affects children's success in reading and spelling. Related to this, Stainthorp and Hughes (1999) have argued that 'young early readers' phonological systems function more effectively at a much earlier age than the norm, because they have the ability to capitalise on their phonological insights when having literacy experiences with their parents; this, in turn, would mean that they could crack the alphabetic code very early' (Stainthorp & Hughes, 1999, p.71).

Goswami and Bryant (1990), extending the findings of Bradley and Bryant's (1983) work, investigated the process of learning to read as a set of causal connections (Bradley and Bryant, 1983; Goswami and Bryant, 1990; Goswami, 1999). Their model proposed three causal connections: 1) a connection between pre-school rhyme awareness and alliteration, and later reading and spelling; 2) a connection between tuition at the level of phoneme and the development of phonemic awareness; and 3) a connection between progress in spelling and in reading and the reverse (Goswami, 1999, p. 218). Their findings showed that rhyme might contribute to reading in two ways; firstly, because rhyme awareness is a predictor of children's phoneme awareness, which, in turn, is a predictor of reading, and secondly, because in the English language rhymes have slightly better consistency in spelling sequences (e.g. light, fight etc), which help children to categorise the words that share either the same onsets or the same rhymes and make associations between the spellings of known and unknown words (e.g. beak/ peak) (Goswami and Bryant, 1990; Goswami, 1999). This knowledge allows them to relate a known to a new word (analogy making), which, in turn, helps them work out how to read and spell new words.

The largest part of Goswami and Bryant's (1990) work referred to the first connection between rhyme and alliteration, and reading and spelling. Goswami (1999, p. 218), in relation to the first connection, said that 'children's use of analogies in reading can partly explain the association between rhyme and alliteration, and later reading and spelling' (Goswami, 1999). She also suggested that even though reading beginners know very few written words, which implies that they have a small basis, they in fact use analogies when they are trying to read or spell (Goswami, 1999). Nevertheless, in

transparent orthographies such as Greek where graphemes reflect upon phonemes and the type of syllables are CV (consonant-vowel) or CCV (consonant-consonant-vowel) the awareness of the intrasyllabic structure of a word is not so helpful as in 'deep' orthographies like English (Porpodas, 2002).

However, in contrast to what Goswami (1999), Goswami and Bryant (1990) and Bradley and Bryant (1983) have suggested regarding the relationship between young children's rhyme awareness and reading acquisition, and the rhyme analogy strategy used by reading beginners, MacMillan (2002) illustrated in her study (evaluating a series of research studies on rhyme and its relation to reading) that, from the examination of the research studies and the quality of the methodology used, there was no evidence supporting either the fact that rhyme awareness is correlated with reading ability or that training in rhyme awareness will lead to reading progress. Thus, what Goswami and Bryant (1990) proposed in relation to rhyme and analogies used in reading fails as a useful form of early reading strategy, since letter-sound decoding skill and considerable sight vocabulary are needed first in order to use it.

It appears in the studies evaluated by MacMillan (2002) that a child must have some letter-sound knowledge in order to perform phoneme or rhyme tasks that require an explicit awareness of these units. This finding tends to erode the argument for large-to-small speech unit development. Although there is a view that very young children are not able to perform any phoneme task (Fox & Routh, 1975; Thomas & Senechal, 1998) or that children have more difficulties particularly in manipulating single phonemes than bigger speech segments, such as the onset and rime (Goswami & Bryant, 1990; Stahl & Murray, 1994; McClure, Ferreira & Bisanz, 1996), there is also contrary evidence (Chaney, 1992; Seymour and Evans, 1994). Duncan, Seymour and Hill (1997) and Goswami and East (2000) revealed in their studies that reading beginners were far better at identifying phonemes (initial/final) in words than at identifying rhyme units, showing that young children are able to perform phoneme tasks. Stuart (1999) and Watson (1998) concluded in their studies involving reading beginners, that the greater the focus on letter-sound (small units) teaching at the early stage, the better children's reading progress would be (Stuart, 1999). Further Walley (1993) argued that 'the emergence of the segment (phoneme segments and other sub-lexical units) as a basic, structural-processing

unit is protracted-beginning in late infancy but extending into middle childhood. The emergence of the segment at an explicit level awaits the formation of segmental categories at a functional level in spoken word recognition (p.292). Nevertheless, Walley (1993) added that the extent to which the emergence of the segment becomes explicit may depend on residual individual differences in its former usage, it may be influenced by the early reading experiences and the type of orthography encountered.

Moreover, regarding the relation between phoneme position and children's phoneme identification skills, Watson (1998) provided evidence in her study that reading beginners can learn letter-sound correspondences regardless of whether teaching instruction is based on phonemes at the onset position only or on phonemes in all positions (Stuart, 1999). This contradicts Stage and Wagner (1992), and McBride-Chang (1995) who found that the accuracy with which phonemes are identified depended on the position of the phoneme in the word, where initial and final phonemes are easier to find and medial phonemes more difficult. MacMillan (2002) suggests that the introduction of a phonemically-based alphabet at the beginning of school helps explicit phoneme awareness to develop more rapidly than explicit rhyme awareness does, and she adds that 'rhyme awareness training may hinder progress by necessitating a much slower pace of letter-sound instruction' (p. 32).

Torgesen and Burgess (1998) have argued that 'an in-depth knowledge of the phonemic structure of the words and of the phonemes themselves needs complex processing of these sounds. Phonological awareness develops gradually and slowly in young children, because phonemes cannot be easily distinguished in the actual sounds that we hear in a word' (Metsala & Ehri, 1998, p. 162). This relates to the work of Morais et al (1979) mentioned earlier, who argue that phonemic awareness is not a product of maturation but a response to demands imposed by instruction in the alphabetic basis of literacy.

Evidence from earlier studies suggests that children find phonological tasks difficult even after they have learnt how to read (Bruce, 1964; Fox & Routh, 1975). Training children in developing phonological awareness can enhance their skills, and they subsequently manage to do well in such tasks. A meta-analysis of studies on the effect of phoneme awareness training has shown that it can have positive effects on

reading development (Ehri, 2001). This suggestion is consonant to what had earlier been suggested by some researchers (e.g. Lundberg et al., 1980; Mann & Liberman, 1984; Bradley & Bryant, 1985; Content, Kolonsky, Morais & Bertelson, 1986; Cunningham, 1990; Byrne & Fielding-Barnsley, 1995) that a literacy instruction programme based on sound knowledge and sound manipulation is likely to have a marked effect on children's phonemic awareness; and on their phonological awareness at phoneme level (Lundberg, Frost & Petersen, 1988) at both syllable and phoneme level (Brennan & Ireson, 1997); and, in turn, on their reading performance. MacMillan (2002) in her study also illustrated that, as was also shown in Bradley and Bryant's (1983) study, phonological training combined with letter-sound teaching can lead to more positive effects on reading ability than phonological training only. However, the effects of this combination are shown to be modest in comparison to instruction concentrated solely on letter-sound teaching.

In the United States, the National Reading Panel Report (2000) reviewed the enormous body of existing research regarding reading in order to summarise objectively the learning effects of various methods applied over the last decades. The Panel, measuring the extent of the impact of each method, examined, amongst others, the impact of phonemic awareness instruction. Phonemic awareness and alphabetic knowledge are considered the two best school-entry predictors of children's learning to read in the first two years of instruction. The examination of the most rigorous studies made in educational research illustrated that children in the early years who are instructed in manipulating phonemes in words could improve not only their phonemic awareness, but also their reading and spelling skills in contrast to other methods applied that do not focus on phoneme manipulation. Moreover, the National Reading Panel Report indicated that phonemic awareness instruction was found to improve children's reading and spelling ability in both short and long term. However, the large effect of phonemic awareness instruction on children's reading and spelling was not found beyond the first grade and was not effective for improving spelling in disabled readers (<http://www.nichd.nih.gov>).

Goswami (2001, p.26) suggests that 'cross-language research on children's reading development has shown that rhymes are more important orthographic and phonological units for learning to read in English than for learning to read orthographically consistent languages like German and Greek' (Goswami et al, 1988;

Goswami, Porpodas & Wheelwright, 1997). ‘Brains are the same across languages; orthographies are not. This is why rhymes are important for learning to read in English’ (Goswami, 2001, p. 26). The Greek language has many more polysyllabic words than English which may lead to rhyming being less salient (see below).

There are several views about the way that phonological awareness influences literacy, which are not necessarily contradictory, since phonological awareness can be developed by children’s learning to read an alphabetic system, or by being trained in phonological awareness. However, it is also possible for a child to develop phonological awareness without either learning to read or being trained. This finding is supported by Stuart and Coltheart’s study (1988, p.148) who suggest that ‘there are various ways of developing phonological awareness including learning to read and being trained. These are not necessarily contradictory. They would be only if it was suggested that there is only one way of becoming phonologically aware’.

2.4.1.2 Phonological awareness and early reading in Greek

In respect of the Greek language, a number of studies have been conducted in order to determine whether phonological awareness relates to children’s literacy development as it does in other alphabetic languages, such as English. Porpodas (1991) investigated the relationship between phonological awareness and phonological short-term memory, and learning to read. Amongst his findings he found that children who had good phonological awareness skills during their time in kindergarten and before they learn how to read had good performance on reading at the end of the 1st grade. This is consonant with the results of studies in the English language (Content et al., 1986; Liberman et al., 1977; Lundberg et al., 1980). This shows that regardless of the orthography the relationship between phonological awareness and reading is a reality, which is not coincidental or superficial, but it appears to be connected with the way the oral language reflects upon written language (Porpodas, 2002, p.253)

Porpodas (1992) investigated the relationship between children’s age and phonological awareness, and literacy learning. The sample consisted of first grade children divided into two equal groups, matched in terms of IQ (Raven’s Coloured Progressive Matrices (adapted by Tsakris, 1970)) and visual perception (Developmental

Test of Visual Perception (adapted from Frostig, 1966)). Group A was the young first graders (mean age: 5.8 yrs) and Group B was the old first graders (mean age: 6.4 yrs.) The first measurement was made during the last month of the first grade, and the second one at the end of the second grade. Children prior to first grade had not received any literacy instruction. The results of his study showed that analysing the aurally presented words in Greek into their constituent phonemes is much more difficult than the analysis of the words into syllables. This is consonant with what Liberman et al. (1974), Treiman and Baron (1981), Lundberg et al. (1980) have found in their studies.

Moreover, the study indicated that the level of children's phonological awareness is related to the level of their literacy attainment during first and second grade. This may indicate that the relation between literacy and phonological awareness may be universal rather than language specific. Given that young children's early phonological awareness skills are not enough for acquiring literacy (e.g. Bradley & Bryant, 1983; Olofsson & Lundberg, 1983; Treiman & Baron, 1983; Content et al., 1986), training in word segmentation at syllabic and phonemic level within kindergarten can facilitate their literacy learning.

The results of Porpodas's investigation showed that age did not have any effect on children's performance (Porpodas, 1992). This finding suggests that age did not seem to be among these factors that influence the children's performance on PA.

Papoulia-Tzelepi (1997), in a study with kindergarteners from different socio-economic backgrounds, investigated the relationship between children's performance on phonological awareness and the characteristics of the Greek phonemes (e.g. position within a word or a unit, type of phonemes etc.). Many studies have shown that the type of consonants, the number of consonants to be identified, the position of the phonemes within a word and within a consonant cluster, are strongly related to the task's difficulty (Treiman, Berch & Wheatherston, 1993; Stage & Wagner, 1992; McBride-Chang, 1995).

Her findings showed that Greek children found it easier to identify the initial syllable when it is a CV (consonant - vowel) type, which is the most common in Greek. However, it becomes more difficult for them when the initial syllable is CCV (consonant cluster + vowel). It is more difficult to identify a phoneme within the consonant cluster, and it gets harder depending on the type of consonant, e.g. /κ/(k) or /ç/(s). The successful

identification of an individual consonant within the onset of a syllable depends on the type of the phoneme, e.g. /μ/ (m) (continuant consonant) is easier to identify than /κ/ (k) (stop consonant). The first phoneme can be sounded in isolation but the second cannot; it is pronounced together with the following vowel, so is not easily identifiable. This can be seen also in English language; a consonant cluster at the beginning of a word is more difficult to identify orally than a simple consonant (Treiman & Weatherston, 1992). Hence, both in English (Kirtley et al., 1989) and in Greek the type of phonemes, the onset and rime of syllables and the syllabic structure have an effect on children's performance on PA tasks (Papoulia- Tzelepi, 1997).

In the study by Papoulia-Tzelepi (1997), there was also a strong effect of the stress on children's performance on phonological awareness tasks. In every Greek word with two or more syllables one syllable is pronounced with more emphasis than the others e.g. γράφω. A small mark called stress '´' (or accent) is written above the vowel in the stressed syllable. The effect of stress on children's performance is due to the fact that it makes the phoneme or the syllable stronger, thus it can easily be identified. Similar to these are the findings of Treiman et al. (1993), who argue that the stress affects children's ability to write correctly all the phonemes. In study by Papoulia-Tzelepi other factors were also found to have an effect on children's performance, such as gender, age (young and old kindergarteners), and the socio-economic status of the family. Age effect was also found in the study by Morrison (1991), gender effect in the study by Maccoby and Jacklin (1972) and socio-economic status effect in the study by Wells (1985) (Papoulia-Tzelepi, 1997).

The fact that there was age effect in the study by Papoulia-Tzelepi, in contrast to that by Porpodas, may be because the sample consisted of kindergarteners, who were less cognitively advanced compared to the first graders in the study by Porpodas. This may indicate that PA is a developmental skill. Children's literacy experiences may have also had an effect on the development of their phonological awareness skills. In general these findings may suggest that the differences between children in PA are evident only before children's entry into the 1st grade and before they receive any instruction. Relative to the last suggestion Porpodas (1989) found that the first graders who had good PA skills upon their entry had better performance on reading and spelling at the end than those who had

poor PA skills. However, the difference between the two groups diminished by the end of the 2nd grade. This finding suggests that there is a large effect of PA on reading and spelling but it is not a long-term effect. The fact that the differences diminished suggest that learning to read and spell may have facilitated the development of PA and helped the poor group catch up the good group. This in turn may have helped the poor group to have good performance on reading and spelling at the end.

Aidinis and Nunes (2001) conducted a study in order to investigate whether different levels of phonological segmentation (syllable and phoneme/initial and final/stressed and non-stressed) play different parts in the connection between phonological awareness and reading across languages. The sample constituted equal numbers of children from three age groups: 5yrs, 6yrs and 7yrs in kindergarten, first and second grade respectively. The kindergarteners were included in order to test whether syllable tasks are easier than phoneme tasks for young Greek children, as they are for English and Portuguese speaking children. Children only from the first and second grade might have shown ceiling effects, whereas the kindergarteners had not yet received any literacy instruction. The phonological awareness tasks were based on Bryant et al.'s (1989) oddity procedure, and a reading task using a word-reading test devised by the researchers, containing one hundred words, of which the range of difficulty was raised gradually.

The results showed that kindergarteners performed significantly above chance level in the syllable tasks at all levels, but only above chance in the two easiest phoneme tasks. As Aidinis and Nunes (2001, p. 165) suggested 'phoneme awareness is clearly not an all or nothing affair'. The results further indicated that initial phonemes were easier to identify than final; shorter words and those where the target segment was stressed were also easier for young children. These findings showed that syllable awareness is more accessible to young children than phoneme awareness when the syllable is formed by at least two phonemes. Stressed sounds simplify the task for children, since they reduce memory and attention demands. The number of segments rather than the type is shown to affect the task's difficulty (Aidinis and Nunes, 2001). However, findings from other studies (Kirtley, Bryant, McLean and Bradley, 1989), where numbers and type of segments were manipulated in a similar way, are not consonant with this. Moreover, it was found that different types of phonological awareness make significant and

independent contributions to learning written Greek. Both syllable and phoneme awareness remained significant predictors when the other one had been controlled for. Wimmer et al. (1994) argue that different levels of mastery of the written language engage different sorts of phonological skill (Aidinis and Nunes, 2001, p.172). Thus, their findings showed that syllable awareness is simpler to achieve than phoneme awareness, important in reading and writing, and not simply a precursor of phoneme awareness. However, these findings concern children who have received literacy teaching (1st and 2nd grade).

Tafa et al. (1998) investigated whether kindergarten children can be trained in phonological awareness skills, and in phoneme-grapheme correspondence, before they learn how to read and write. The results indicated that the experimental group differed significantly from the control group in rhyming, identification of the initial phoneme, and segmentation of the initial phoneme. However, there was no significant difference between the two groups in phoneme-grapheme correspondence task. The largest difference in means between the two groups was in initial phoneme segmentation, and the least was in identification of the initial phoneme. Gender did not seem to have any effect on children's scores. Thus, the training programme contributed to the development of children's phonological awareness, even though they had not yet learnt reading and writing. This finding is consonant with Porpodas' and Palaiothodorou (1999a, 1999b) studies, who suggested that children's PA skills can be developed before they learn how to read if they follow a training programme (Porpodas, 2002). It occurs that what emerged from Tafa et al's (1998) and Porpodas' and Palaiothodorou (1999a, 1999b) studies is also consonant with findings from English studies (e.g. Bradley & Bryant, 1983, 1985; Bradley, 1987; Lundberg et al, 1980; Mann & Liberman, 1984; Lundberg et al, 1988; Content et al, 1986; Morais et al, 1986; Byrne and Fielding-Barnsley, 1991; Ehri, 2001).

Thus, phonological awareness is shown to have a strong connection with children's reading and spelling acquisition. However, there are different views on whether phonological awareness is a precursor to, or a result of, reading and spelling in a alphabetic script. Nevertheless, these two approaches are not necessarily contradictory, since the relationship may be reciprocal. It has been found that PA can be developed by

children's learning to read and by children's training in PA, or without either of these. Thus, these findings suggest that there is not just one way of becoming phonologically aware. Moreover, phonemic awareness, though it is more difficult for young children than syllable awareness, is found to have a large effect on children's reading and spelling ability, and this is not language specific. However, in less orthographically consistent languages like English, bigger speech segments such as rhymes may be as important for learning to read as the knowledge of phonemes. Furthermore it is shown that the effect of the position of the phonemes within a word, of the accent and of other factors such as gender, age and socio-economic status of the family is universal and not language or culture specific.

2.4.2 Letter knowledge

It is argued that children need to crack the alphabetic code in order to be able to read. Cracking this code calls for 'fast and accurate access to knowledge of the alphabet letters' (Stainthorp & Hughes, 1999, p. 71). This means that children need to be able to identify all the alphabet letters by their names and their sounds; to match letter-to-sound and sound-to-letter and cross reference all that knowledge with the letter-names. Additionally they may recite the alphabet. The last one, as Stainthorp and Hughes suggested, is not so useful in reading (Stainthorp & Hughes, 1999). However, it has been suggested by Clay (1991) that letter knowledge may not be strictly the knowledge of the names and sound of letters but also any information about a letter, such as a word that starts with it. This shows that young children's letter knowledge cannot be measured in only one way. Thus, children's letter knowledge consists of all the information gathered from these measures, namely letter- name, -sound and general letter knowledge.

Fundamental research in this area indicates the important role that letter-name knowledge plays in early literacy acquisition. Early studies by Gavel (1958) and Wells and Raban (1978) found a high correlation between letter-name knowledge and reading achievement, and that letter identification was more highly related to reading at the age of seven than concepts of print respectively (Blatchford, Burke, Farquhar, Plewis & Tizard, 1987). Gentry (1982), Henderson (1985), and Ehri (1983, 1986) have suggested in their theories about spelling that children rely heavily on letter-name strategy. This results in

children showing evidence of ability to spell a phoneme or a sequence of phonemes that match a letter-name with the corresponding letter whenever it is possible to do so (Treiman & Cassar, 1997). However, these findings emerged from investigations of children's spellings skills through nonword spelling tasks

Treiman (1994) in her investigations of this ability, using nonwords in order to avoid the possibility of children having already read the stimuli, showed that the use of letter name strategy in reading monosyllabic CVC (consonant-vowel-consonant) words, which contained a sequence of phonemes that matched the name of an English consonant letter e.g. *vax* → contains the name of the letter *r*, but also the phoneme /r/, which is not the letter name, is not equally likely for all consonants; it is most common for *r*, next most common for *l*, and less frequent for other consonant letters. This strategy is only applied to American English speaking children.

Studies on pre-schoolers' spellings reveal that they often spelled /*gar*/ (nonword) as *R*. This finding was somewhat anomalous, because usually it is easier for children to spell the initial consonants than the final ones (Treiman, 1993). She interpreted this as meaning that children who have a strong knowledge of the letter names before they receive formal literacy teaching may be able to produce sound-based spellings; they can appreciate that certain aspects of conventional spellings, such as the *r* in *car*, make sense given the sounds in words (Treiman and Cassar, 1997). However, as mentioned above, this finding is more common in U.S English or in Scottish English, where the letters AR are both vocalised, in contrast to U.K English, where the word *car* is just 2 phonemes /kɑ:/. Thus, the letter-name strategy in U.K English may be applied to young children's reading, but not in the same circumstances as in U.S English or in Scottish English. The same happens with the word 'well', which is 3 phonemes with a letter name. Moreover, it was found that letter names help children to discover and remember the sounds of the letters, especially those whose names consistently suggest their sounds e.g. *bi* and /b/ but not *d3i* and /g/. Treiman (1994) concluded that a letter name's phonological properties influence children's tendency to use the letter to spell a sequence of phonemes in its name, and they affect their ability to use the letter's name as a clue to its sound. These show how important it is to consider the language when investigating all aspects of literacy development.

However, in the Greek alphabet the letter names do not map onto the majority of phonemes directly. The use of the letter-name strategy for Greek children in order to spell unknown words is not as useful as for English or U.S children e.g. in English the letter-name /ei/→a can be used in the word e.g. *play* and be spelt *plā* or the letter-name /j/→u can be used in the word e.g. *you* and be spelt *u*, whilst in Greek the letter-name alpha→α cannot be in any word or the letter-name vita→β. However, there are some exceptional alphabet letters of which their letter-names are simple CV (consonant-vowel) combinations that can map onto phonemes e.g. /mi/→μ can be used in the word ‘μήλο’(milo) and could be spelt ‘μλο’ by using a letter name strategy; likewise /ro/→ρ can be used in the word ‘ρόδα’(rotha) and could be spelt ‘ρδα’. These exceptions are μ(/mi/), ν (/ni/), ξ(/ksi/), π(/pi/), ρ(/ro/), φ(/phi/), χ(/hi/), ψ(/psi/) and would be spelt in this way, but only if a letter name strategy is applied. Thus, Greek children, even if there are some exceptions regarding some letter-names, cannot primarily rely on the letter-name strategy to spell a word as in English.

Ehri and Wilce (1985) conducted a study to find out whether reading beginners become able to use phonetic cues more effectively than visual cues when they learn to read and spell. While assessing children’s knowledge of alphabet letters they found that novice readers had mastered letter names but the prereaders had not, suggesting that one of the prerequisites for being able to process graphic cues effectively in words is the knowledge of the shapes and names or sounds of alphabet letters. Moreover, in an earlier study, Ehri (1983) further suggested that letter names help children learn to associate phonemes with printed letters (Tunmer, 1991). Wagner et al. (1994) and Sonnenschein et al. (1996) reinforce Ehri’s findings, showing in their studies that letter name knowledge has a modest causal effect on phonological processing abilities; ease and fluency of naming also has an important role (Baker et al., 1998).

However, as Tunmer (1991) suggested, a child can benefit from the letter name knowledge because s/he can discover the grapheme-phoneme correspondences, and the names of most letters contain the phoneme to which the letter normally refers. However, Tunmer’s studies (1986, 1988) showed that this benefit is evident only when the child has some minimal level of phonological awareness (Tunmer, 1991).

Regarding letter naming and its relation to reading achievement, it has been shown that there is a contradiction among some findings. Some studies suggest that prereaders' knowledge of letters and their names is a good predictor of their success in learning to read, whereas others (e.g. Gibson and Levin, 1975; Ehri, 1983) advocate that teaching children to name the alphabet letters does not help them too much in reading (Adams, 1990). Others (e.g. Stanovich et al.,1984 ; Tunmer et al.,1988; Walsh et al.,1988) have all suggested that the speed with which children can name individual letters is both a strong predictor of success for prereaders and a strong correlate of reading achievement amongst beginners (Adams, 1990).

What makes letter familiarity such a good measure is that 'it is an index of thoroughness or confidence with which the letters' identities have been learned; [...] of the automaticity or effortlessness with which letter recognition occurs' (Adams, 1990, p.63). The more a child knows the letter names, the easier it may be to learn about letter sounds and word spellings, and less effort is needed to work on the patterns of the individual letters in order to recognise them. Specifically, Adams suggested that the knowledge of the English letter names hastens children's learning of their sounds because it helps the learners to remember them. This is consonant with Treiman's (1994) findings, mentioned above, which preview that young children make use of the letter name strategy in order to utter the words' sounds and help them read. Finally, Adams (1990) added that speed of colour and object naming, as well as letter naming, is indicative of a deep capacity that differs between individuals, and it is very important for reading. Poor readers are found to have difficulties in naming rapidly, which, in turn, retards their reading progress.

Bialystok (1991) suggested that the child's appreciation of the symbolic nature as a distinct part of written language is an early indication of the understandings about print. The ability to identify and label non-sequential letters of the alphabet is very different from the ability to recite the alphabet. The failure of some research projects (e.g. Gibson & Levin, 1975; Ehri, 1983a) to show the connection between teaching the alphabet to preschoolers and later reading success suggests that this skill can be born out of exposure to print and text through meaningful interactions with a supportive adult in the emergent, preschool literacy phase (Riley, 1996a; 1996b).

In all reading developmental models, it is shown that children rely heavily on letter-sound correspondences and on their knowledge of speech sounds when they read. Letter-sound knowledge is required to identify unknown words and to develop the skill to recognise words quickly and automatically (Gough & Hillinger, 1980, Stanovich, 1980; Tunmer, 1991).

Evidence to support these claims comes from studies showing the relation of letter-sound knowledge to the acquisition of basic reading skills (Backman et al., 1984) and studies, which show that training in phonemic segmentation enhances reading achievement (Tunmer, 1991). Once the child is aware of the individual sounds in spoken words and how the letters in printed words represent these sounds, s/he will be able to capitalise on the relationship between sounds and letters in written language (Gaskins, 1998; Ehri, 1994). Moreover, Stuart and Coltheart (1988) found in their study that the developmental change from the use of non-phonological to phonological errors (e.g. the representation of the initial or both the initial and final letter of words) coincides with the ability to pronounce at least thirteen simple letter-sound rules, and with good phonological awareness in preschool (Savage, Stuart & Hill, 2001, p.2). This suggests that thirteen, is the least number of letters that are necessary for a child to 'take off' and start developing his/her reading skills. Stuart and Coltheart (1988), have also suggested that 'the child with good phonemic segmentation skills and good knowledge of letter-sounds can begin to construct an orthographic lexicon without necessarily having any formal experience of printed words' (1988, p.172). This implies that letter-sound knowledge, as well as phonemic segmentation, facilitates reading attainment, even before the child has any knowledge of the printed words. Earlier, Bradley and Bryant (1985) found in their study that the most effective intervention was instruction in odd one out sound tasks, coupled with instruction about the alphabet (Goswami & Bryant, 1990).

Children's phonemic awareness, defined by Adams (1990, p.64) as 'the ability to discriminate between phonemes, those smaller-than-a- syllable speech sounds that correspond roughly to individual letters or graphemic units', is developed later than syllabic awareness. That is why children find syllables easier than phonemes. In young children repetition and experience facilitate the process of remembering a word's sounds, which are not always distinguishable; yet phonemic awareness is not a working

knowledge of phonemes but conscious, analytic knowledge that ‘developmentally seems to depend upon the child’s inclination or encouragement to lend conscious attention to the sounds (as distinct from the meanings) of words’ (p.65). The child should have a thorough understanding that words consist of a series of phonemes that can be analysed completely and on demand (Adams, 1990).

Furthermore, Riley (1996) found in her study that among the predictors of later reading success (concepts about print, letter knowledge, and writing their own name), by far the most powerful was the child’s knowledge of the alphabet (knowledge of both letter-names and –sounds), acquired because of experiences with print and informally in preschool. Thus, it is suggested that the ability to recognise individual letters and hear the sounds in words is the first step in the development of the orthographic and phonological processing capability, which is essential in literacy. However, these findings just reaffirm what Wells and Raban (1978), and Tizard et al. (1988) have supported earlier in their studies regarding the strong association of orthographic knowledge with later reading. Riley adds that the effect of alphabet knowledge on children’s later reading development also lies with the relationship between letter identification and concepts about print. This link indicates the nature of letter knowledge that makes it so powerful a predictor. Understandings about print are positively and enduringly related to reading attainment; they are crucial and prerequisites for the acquisition of conventional literacy.

Clay (1991) indicates that the names and sounds of the alphabet letters are nothing more than labels, ‘which are the tip of the iceberg, used to represent all the stored information about each letter symbol. Even when the letter identification becomes over-learned and habitual it continues to be enriched by building more extensive associations around these letters’ (p.280). In her project with New Zealand children, she found that their responses to letter identification tasks were firstly alphabetic, secondly words beginning with the letter, and lastly (decidedly least preferred) the sound equivalents. These findings do not imply that children have poor phonic knowledge, nor are they indicative of poor teaching. Rather, they show that children have more ways of identifying the visual symbols and discriminating them. Letter knowledge may not be strictly the knowledge of letter names and sounds; children may actually know something about a letter, such as a word that starts with it, which is considered to be good evidence

of children's letter knowledge. So, apart from strictly assessing their knowledge of letter names and sounds it is necessary to further assess any information that children may have on the alphabet letters.

In a longitudinal study in Greece about young children's (5.8-6.2 yrs) meta-linguistic abilities (Manolitsis, 2000), found evidence to support the view that children's good knowledge of alphabet letters is strongly related to their meta-phonological and meta-syntactic abilities. His findings suggested that children had very poor letter knowledge; 48.4% of the sample (N=159) did not manage to find any letters, whereas only one child knew twenty one letters, which was the highest score in this task. Only 25% of the sample knew at least two letters. Though awareness of the alphabet was very poor, the study revealed that their meta-linguistic abilities were strongly related to their letter knowledge. Furthermore, Tafa (2003), in a study concerning what children know about Greek alphabet letters on their entry to kindergarten, found they had better knowledge of upper case letters regarding both their names and sounds than that of lower case. Additionally, the study showed that at the beginning of the year, children's letter sound knowledge in lower case was significantly better than their letter name knowledge. Though children had better knowledge of the sounds in uppercase letters, the difference in mean scores on letter names and on letter sounds was not significant.

Regarding the letters of the Greek alphabet, Porpodas (2002) suggests that a factor that affects children's learning of the alphabet letters in the first grade is the frequency of their appearance in the schoolbook of learning to read, where children receive formal and systematic literacy teaching for the first time. Further, he adds that letters' frequency of appearance is likely to be affected by the frequency of their appearance in children's vocabulary - the more frequently a letter appears, the easier it can be learnt, and reverse. His study indicated that the most frequent letters in the schoolbook are vowels, which comprise 52.84% of the total number of the book's letters. This means that one out of two letters is a vowel; this is not surprising, since the form of a syllable in the Greek language is usually a consonant and a vowel (CV), and there are fewer vowels than consonants.

The new literacy curriculum for Greek kindergarten, introduced in September 1999, emphasises the importance of children learning the letter-sound correspondences

during their time in kindergarten, and their relation to reading and writing development. It suggests that children should be encouraged to discover the relations that exist within print without being corrected or shown the 'right' way, so that they can understand what comprises print and its meaning (Φ.E.K., 1998). Though the new curriculum suggests children's development of letter-sound correspondences, it does not refer to direct teaching; instead, it supports children's acquisition of letter knowledge through emergent literacy.

Thus, letter knowledge plays an important role in children's literacy acquisition. Their ability to identify (to name) the alphabet letters seems to have a strong relation to their reading and spelling ability. The evidence regarding young children's knowledge of the letter sounds appears to be similar. Any information about a letter, for example a word that starts with it, is considered letter knowledge. Moreover, studies, as described above, have shown that letter knowledge is also a strong predictor of children's reading and spelling performance. This evidence appears to be universal and not language specific. Thus, it is suggested that, like phonological awareness and concepts about print, letter knowledge is one of the most important prerequisites to reading and spelling acquisition.

2.4.3 Concepts about print

In 1979, Clay was one of the first who used the term Concepts About Print (CAP) in order to explain aspects of children's developing reading behaviours, and gain insights into children's involvement with written language (Goodman, 1981; Clay, 1989). Many children, before coming to school, have been involved with various reading experiences at home and in preschools. These help them to develop knowledge about books, the print in books, and the functions of books. Children may be read to, pretend to read themselves, and read with their older siblings. Clay (1989) suggested that the knowledge that children gain from these varied informal experiences is very important for teachers and educators to understand in order to plan appropriate beginners reading experiences for children, and immerse them in literacy. She believed that unlike the traditional reading readiness measures, which provided little insight into the knowledge that young

children have about books and written language, capitalising on their direct contact with written language was the best way to prepare children for reading (Goodman, 1981).

Clay's theory regarding CAP is based upon two things - what a child may be attending to when s/he is exposed to print in the early stages and in what order these concepts are achieved. These are what psychologists call orienting behaviours, and children acquire them over a period of time. Presenting printed words to children does not mean that their eyes and brain can locate, recognise, or use this information in the same way as adults. The orienting behaviours have three components: a movement (or motor) component; a visual perception (or looking) component; and a mental (or cognitive) component. Young children may have only a vague awareness of some features in print, since print is something new for them. They attain clear understanding of print, and even verbal manipulation, when their control over print is strengthened. They then not only get the items right, but they come to know why they are right, and can check their decisions in more than one way. They have verbal, visual, motor, and order information about CAP items (Clay, 1989). Before the child goes to school his/her movements are considered unconstrained; on his/her entry to school, s/he has to relate his/her whole body, two eyes (together), two hands (separately) to a page of print, which has directional constraints. The child must learn that print is made up of lines (which have direction), words (which have also direction), letters (which have fixed orientation), consisting of particular strokes and angles. This knowledge refers to the motor component of the orienting behaviours (Clay, 1991). Usually, school entrants score low on these tasks, but increase their scores to near perfect as they become readers and writers. Any difficulties in orienting behaviours may result from conceptual and linguistic problems, or from the lack of opportunity to learn. Nevertheless, if children are not able to stay within the constraints of the printer's code, this is a great impediment to reading progress. The emergence of this control over attention is what CAP tries to capture (Clay, 1989).

What the CAP test measures makes it flexible to use in many languages and cultures. However, the original test cannot be simply translated for use in cultures other than English, e.g. U.K, Australia, New Zealand, etc. There are cases where the conventions for recording languages differ. Some use other scripts, like in Chinese,

Greek, and Hebrew; some use other signals like the question mark, which is vertically reversed in Spanish, or like the English semicolon in Greek. Even the directional conventions may differ (moving right to left, from the back to the front) like in Urdu, Japanese and Hebrew. Such recording conventions determine what follows what, and the young reader has to learn to control the temporal sequencing of attention according to these arbitrary rules (Clay, 1989; Clay, 1991). Goodman, reviewing Clay's CAP test, suggested:

'It is the first instrument using real reading experience with very young children to provide to an observer their knowledge of how to handle books, and of the written language in the books. It is a natural measurement to help in understanding how children interact with a real book in a real situation. This test is an innovative approach to evaluation' (Goodman, 1981, p.447).

Regarding the application of the test, Goodman also added that a teacher, when s/he becomes comfortable with the CAP test, may adapt the procedure for use with any pictorial story book, instead of adapting the test to any setting and culture; this is because most story books provide the child with the same opportunities that the test booklet provides.

Clay devised a test that includes two caption books (Sand and Stones). The objectives of this test include observing precisely what a child is doing, uncovering the processes a child controls, and discovering reading behaviours, which need to be taught. It consists of twenty four items administered individually. Though this form of the test might appear to pose little difficulty for five and six years olds, it was developed for this age group in Australia in order to identify children for Reading Recovery remedial treatment. With new entrants and non-readers, a modification of the test can identify individual differences, and show how well prepared children are for a particular instructional programme. It points the way to instruction for particular children, and it records their progress in the first year of instruction (Clay, 1989).

The CAP test has been used worldwide in many studies. Griffin, Spicola, Banks and Reyes (1985) tested CAP conducting a two year longitudinal study with ninety five Black, Mexican-American, and Indian-American children in the USA (ages 3.7-5.9). They found at the beginning of the study that children had few concepts about print

(mean score: 2.05-3.72), while at the end of the study they had more concepts (mean score: 9.07-14.36). The differences between the groups were not significant, and their print awareness was similar to that of mainstream groups (Clay, 1989). Iturrondo (1985) used the CAP test in Puerto Rico to explore the possible relationship between story-reading and the emerging knowledge of printed Spanish for a group of lower class preschool children (N=124). She matched two groups of children on CAP scores, and then one group was exposed to story-reading at least three times a week for four months. The difference in CAP scores at the end of the special programme was in favour of children who heard the stories (Clay, 1991).

Schmidt (1983), in a cross-cultural study with preschoolers from the USA and Denmark, used the translated version of the CAP test. He found that U.S and Danish children scored in similar ways, both as preschoolers and after one year at school. However, U.S children were at school at ages 6-7, whereas Danish children were not. This resulted in marked differences at that time as a consequence of the instruction, which disappeared when the Danish children completed one year of schooling (Clay, 1989; Clay, 1991). Brugelmann (1986) used a CAP-like assessment aiming to understand the concepts of reading and writing that German children bring to school, and to help teachers match their activities and learning tasks to the children's knowledge. However, some items needed to be changed or excluded, because German school beginners found some text features and questions difficult. The actual aim of Brugelmann's study was to pretest children before they began to read, and not to monitor their reading progress or to capture their visual attention. Thus, Brugelmann, after changing and excluding some items, added some new items with the aim of investigating preschoolers' abilities to distinguish words from non words, and their knowledge of the use of the space to separate words. If the intended use of the test is to inform the teacher only about the time children enter school, and not about their progress during the first year of learning literacy, then more difficult items like temporal order may not be used. In the original test, difficult items were just skipped.

Concepts about print, i.e. book handling skills, directionality of print, and letter knowledge are very much related to the baseline assessments which are now in place in schools across England and Wales at the start of Key Stage 1. This is the time when

children have just begun statutory education at around five years of age. The acquisition of these concepts may well either result from incidental learning and modelling at home, or from any deliberate attempts to teach them directly (Stainthorp & Hughes, 2000).

Introducing children to the printed world, and familiarising them with the concepts related to print, are now also emphasised in the curriculum relating to literacy for kindergartens in Greece. Even if compulsory education does not start from kindergarten, one of the aims suggested by the current curriculum is that children should learn the basic conventions of reading in the context of the Greek alphabetic system during their time in kindergarten. These conventions concern mostly the concepts related to print (e.g. directionality, book handling, etc.), which appear to be strongly related to reading acquisition, which, in turn, relates to children's later performance in school. The ways suggested for children becoming familiar with these concepts were either direct teaching at school or their continuous exposure to print (Φ.E.K, 1998).

The results of a study conducted in Greece regarding concepts about print revealed that a large number of children at the end of the first grade do not seem to understand the concepts of 'word', 'sentence' and 'title of the book' (Varnava-Skoura, 1994). This is supported by the findings of another study that was undertaken by Panteliadou and Cheppaki (1995), who suggested that not only first graders but also second graders appeared not to have properly understood the 'technique' of reading, though they had received systematic instruction in literacy (Tafa, 2000). These studies were carried out before the introduction of the new kindergarten curriculum.

In the English language a body of studies has investigated the relationship between the CAP and reading. Day and Day (1979) conducted a study which investigated the relationship between CAP (Sand version) and the Metropolitan Readiness Test, and the development of children's concepts about print from kindergarten to early first grade. The findings of this study suggested that the concepts measured by the CAP were associated with measurements of reading. Specifically, they supported the use of both Sand and the Record of Oral Language-ROL (Clay, Gill, Glynn, McNaughton, Salmon, 1976) in investigating reading problems and other aspects of reading behaviour. The high correlations of CAP with the Metropolitan Readiness Test (MRT) indicate that CAP may



be useful in verifying and elaborating the readiness or lack of readiness that is shown by the MRT (Day & Day, 1978; Johns, 1980).

Johns (1980) extended Day's and Day's (1979) work and investigated whether children of various reading abilities would differ in their CAP (Sand) scores. The hypothesis of the study was that if there were differences among children of various reading abilities, insights into patterns that characterise these children could be found by items on the CAP. The findings showed that there were significant differences in CAP scores between groups of children identified as above-average, average, and below-average readers. These findings lend weight to studies that have sought to link the cognitive clarity theory and reading achievement. Downing and Leong (1982), defining cognitive clarity, suggested that 'young children approach reading instruction in a normal state of confusion, and under reasonable conditions of instruction, they work their way out of confusion into cognitive clarity' (Clay, 1991, p. 152). The data from this study suggest that above-average readers have a greater understanding of print-related concepts than below-average readers. Specifically, the latter were inferior to the former in print-direction concepts, letter-word concepts, and advanced-print concepts. This indicates that factors other than age may also influence the acquisition of print-related concepts (Johns, 1980).

The results from the early work of Johns (1980), and Day and Day (1978), suggest that there is a relation between concepts about print and reading, since high scorers in CAP appear to be better readers. This is supported also by Ehri (1979), who has stated that 'awareness of concepts about print may interact with the reading acquisition process, so that it exists as both a consequence of what has occurred and as a cause of further progress in reading' (Johns, 1980, p.547). However, even if children have little awareness of CAP, they can be taught the major concepts about print and the language of instruction that are related to reading by the teacher. As Vernon (1957) stated, exercises and instruction to help students understand the concepts can be very beneficial, especially for children who are less able readers and have cognitive confusion (Johns, 1980). This has also been suggested by Clay (1991) who, though she suggests that working with print, reading, writing, and discovering things about printed texts are the best ways for a child to learn about print. She also supports that in cases where

children face confusion regarding concepts about print, the teacher should ‘master these concepts at the early reading stage with appropriate tuition on the simplest line of print’ (p.143). Furthermore Riley (1996b), in her investigation about the entry skills that most reliably predict success in reading by the end of the reception year, showed that children’s knowledge of concepts about print, although not as strong a predictor of reading as children’s alphabet letter knowledge or ability to write their own names, had a positive relationship with reading both at the beginning and at the end of the year. Moreover, Riley (1996b, p. 99), in stressing the significant role of the concepts about print in the continuum of literacy acquisition, argued that ‘children’s concepts about print are slowly developed through the emergent literacy phase; they develop through encounters with print in the twin processes of early reading and primitive message writing’.

Thus, the acquisition of concepts about print is related to children’s reading behaviour. Clay (1989) who was the first to use this term believed that the investigation of these concepts provide an insight into the knowledge children have about the books and written language. This is because capitalising on children’s direct contact with written language is the best way to prepare children to learn to read. Many studies have shown that awareness of CAP it is not only related to reading but it also predicts success in reading. However, it has been suggested that CAP can be both a precursor to progress in reading and an outcome of learning to read. Thus, the investigation of concepts about print indicates their importance for young children’s literacy acquisition and illustrates the interaction between CAP and reading.

2.5 Exposure to print

As mentioned above print exposure appears to be one of the most important factors that relate to children’s literacy acquisition. Children’s first contact with print generally takes place in their home environment particularly in Northern economically advantaged communities. This means that children’s literacy experiences are strongly defined by the context in which they occur (Neuman & Roskos, 1993). Cunningham and Stanovich (1997) point out in their work the reciprocal influence that exposure to print itself has on the development of cognitive processes. Their interest in exposure to print

came from the concern about its relation to children's academic problems. They suggest that poor readers who experience problems in decoding are less exposed to print than good readers. Deficient decoding skills, lack of practice, and difficult material may result in 'unrewarding early reading experiences that lead to less involvement in reading related activities' (Cunningham & Stanovich, 1997, p. 934). Mason (1980) argued that 'reading failure may occur if children do not have experiences with environmental print during the preschool years that help them learn to recognise and name letters' (Baker et al., 1997, p. 276).

Nevertheless, several studies have suggested that exposure to print can also serve as a means to develop processes and knowledge bases that facilitate reading comprehension. In these studies, the correlations made between measures of print exposure and measures of phonological processing skills, across a variety of ages, remain quite modest. However, this does not mean that print exposure does not have any effect on reading skills. Specifically, in several studies (e.g. Cunningham & Stanovich, 1990, 1991; Stanovich, 1993; Stanovich & Cunningham, 1992; Echols et al., 1996) high correlations were found between print exposure and word recognition, spelling and orthographic tasks, and very strong correlations with vocabulary and other verbal abilities. Also Stanovich and West (1989) have shown that the more a child is exposed to print and engages effectively with texts, the more his/her skills will become fluent and automatic.

However, print exposure, apart from referring to the ways that children deal with print, also involves children's interaction with printed material. Children listen to or are read stories, which could be considered as the first link to literacy. Having stories read to them enables children to begin to form a mental model of the basic elements of a story, develop their expectations, the attributes of certain characters, and the order in which events occur.

The interaction involved between the reader and the listener, and the conversational exchanges that occur, are considered to be very supportive regarding children's understanding of the story. These exchanges gradually provide more and more challenging tasks for the child, which require more sophisticated thinking about the printed material. This interactive process makes story reading a factor of great influence

on young children's literacy development (Neuman & Roskos, 1993; Whitehead, 1997, 2002). According to Neuman (2005, p.5) literacy development is not just a matter of learning a set of technical skills. It is a purposeful activity involving children in ways of making, interpreting and communicating meaning with written language. Sulzby (1985) suggested that children first begin to notice some of the features of print, maybe in the illustrations themselves, and then in the larger sections of the text on the page, and only at the final stages prior to reading, children will begin to actually read words and sentences with comprehension (Teale and Sulzby, 1986).

There is research evidence that shows the extent of the rich store of knowledge about literacy the child acquires before schooling begins. This suggests that very early, around the age of 6 months, children develop understandings incidentally and naturally from living in a print-filled world (Riley & Reedy, 2003). Nevertheless, the Curriculum Guidance for the Foundation Stage in the UK (DfEE, QCA, 2000) does not emphasise the importance of the fundamental, essential and motivating understandings or the concept referred to by the researchers as understanding the 'big picture' of literacy as much as it emphasises the code aspect of it. Clay (1985) has argued that the understanding of the communicative function of print, and that text has its own conventions of format and layout (concepts about print) is one of the most essential steps on the path towards reading (Riley & Reedy, 2003). However, the list of Early Learning Goals document says that children simply need to know that print carries the meaning and, in English, is read from left to right and from top to bottom (Riley & Reedy, 2003).

Riley and Reedy (2003) suggest that children acquiring the concept of the 'big picture' of literacy, will ensure that they will have a positive attitude towards the meaning making, enjoyable and purposeful aspects of books and prints. Children need to understand and know the daily uses of literacy and this can only be done by watching experienced readers and writers who can show how a text can be used within the child's particular context. Until young children understand the nature and purpose of literacy there will be very little progress in their reading and writing skills. The suggestions of Riley and Reedy emphasise the role of the adult in early years settings who needs to capitalise on this early learning; to be sensitive to the stages that each child has reached;

and to be aware of learning that has to occur for progress towards conventional literacy to take place (Riley & Reedy, 2003, p.79).

Neuman (2005) suggests that 'successful reading ultimately consists of knowing a relatively small tool kit of unconscious procedural skills, accompanied by a massive and slowly built up store of conscious content knowledge. It is the higher order thinking skills, knowledge and dispositional capabilities, encouraging children to question, discover, evaluate and invent new ideas that enable them to become successful readers' (Neuman, 2005, p.4). Moreover, regarding the literacy instruction given in the early years, Neuman makes specific reference to those children who come from deprived family contexts. She argues that any early literacy instruction that explicitly and systematically helps children develop their conceptual knowledge base that underlies the meanings of words will also make much difference in overcoming the gap between children from low- and middle-income families (Neuman, 2005).

Neuman, Copple and Bredekamp (2000) suggest that in order to attain a high level of skill (e.g. a rich language and conceptual knowledge base; a broad and deep vocabulary; verbal reasoning abilities to understand messages that are conveyed through print; phonological awareness; the alphabetic principle; letter-sound correspondences; and a vocabulary with highly familiar words (McCardle, Scarborough & Catts, 2001), children need opportunities to develop these strands interactively and not in isolation. Meaning motivates children's earliest experiences with print, and not sounds or letters (Neuman & Roskos, 2005).

The development of these understandings starts slowly and very early in a child's life and continues until s/he is being engaged in meaningful literacy activities at home and at pre-school environment. It is of great importance for children to share books and stories, to make books and write letters, cards and notes or to observe others reading and writing. When young children are engaged in such activities jointly with adults and learn to use print for various purposes, their need to learn how to read and write and in turn 'decode' the print world and function effectively within it will constantly be reinforced (Riley & Reedy, 2003). These are essential understandings in order for children to benefit from the more formal teaching of literacy.

Moreover, Riley and Reedy (2003) say that also it is important for children to understand that the alphabet letters are symbols that stand for the individual sounds and can be identified within words. Further, children's awareness develops more when they realise that the letters apart from representing the sounds can also be put together and make up words that, in turn, can form sentences which can be read to say something meaningful or to carry important information. The realisation of all these is an important indicator of successful reading later on. Finally, Riley and Reedy suggest that at this early age this knowledge can be acquired from children only through many pleasurable encounters with print. The understanding of these is not an easy task for young children and only a rich, varied and meaningful programme of literacy activities will ensure that children's alphabet knowledge will be secure enough to support their first steps in fluent reading. Additionally, Riley and Reedy argue that 'young children develop alphabet knowledge most successfully when making their own connections, with the support by an adult, in the task of reading and writing, and that direct instruction is beneficial only when it is matched closely to the child's developing capability and it is grounded in stimulating, meaningful activity' (Riley and Reedy, 2003, p.81).

Neuman and Roskos (2005) suggest in their work that although standards and indicators may identify a typology of skills that serve as important precursors to eventual literacy, it is important to recognise that in practice children acquire these skills in coordination and interaction with meaningful experiences (p.127). However, relative to children's experiences, Riley (1999) suggests that, 'although homes at all levels of socio-economic status and education offer many and varied opportunities for children to develop their understanding about spoken and written language, it appears to differ in the quality of the encounters and the extent to which they capitalised upon by the adults' (Riley, 1999, p.73). The study of Senechal et al (1998) showed that different kinds of literacy experiences are related to the development of different kinds of literacy-related skills (Riley, 1999).

Strongly related to children's literacy acquisition is also the age at which literacy is taught. In Boyer's study (1991), and in Goals 2000 Educate America Act (1994), the broad term of school readiness is defined as a repertoire of experiences and abilities that influence a child's response to academic instruction, mastery of material, and

performance relative to other classmates. Reading readiness as a part of school readiness refers to a subset of these skills specifically related to learning to read (Crone & Whitehurst, 1999, p.604).

2.6 Reading readiness

The concept of reading readiness has been a disputed issue for both educators and parents. Many changes have been made in the field of early literacy, which reflect the changes that have been made generally in early childhood practices. Saracho and Spodek (1993) have indicated that in the past, kindergarten and pre-kindergarten teachers were charged not to provide any printed material in the classroom. It was suggested that making such material available would only force children to begin reading prematurely, or would create frustrations in children who were not 'ready' to read. In the past, the prevalent thought was that children would become ready to read when they were at the mental age of 6 ½ years (Saracho & Spodek, 1993, p.vii). Related to that was Gesell's (1940) theory which suggested that development was based on maturation. Specifically, introducing any kind of learning prematurely would create failure and frustration. Before starting literacy teaching, the teacher assessed the child, or observed him/her in the classroom in order to determine whether there was readiness to receive literacy instruction (Spodek & Saracho, 1993).

The following studies present recent educational reforms that have been made regarding children's age and reading readiness. In the U.K, age at school entry is one of the factors that works as an indicator of school readiness, and has received much attention from the researchers. Results of studies about the role of age in children's reading performance have raised a lot of questions and extended debates, and have led to serious considerations of the role of pre-school education in children's formal schooling (Sharp, 1998).

The first group of studies that deals with the question about the school starting age refers to international comparisons. In particular, comparisons are made with other countries that have different policies regarding the age of school entry, and raise questions about whether an earlier school starting age contributes to children's academic achievement.

In the U.K the statutory school starting age of five years is regarded as low, because in other countries children officially start school at the age of six, or even seven. In practice the school starting age is even earlier, because most English and Welsh children begin schooling at the age of four. There is a growing practice to admit children to reception classes at the beginning of the year in which they are typically rising fives (Sharp, 1998). In a study in which the U.K did not take part, the International Association for the Evaluation for Educational Achievement (IEA) measured reading standards in 32 systems of education (Elley, 1992):

Belgium, Germany, Finland, The Philippines, Botswana, The Netherlands
Singapore, Slovenia, Thailand, Indonesia, Trinidad, Ireland, Hungary,
Switzerland, Greece, Spain, Zimbabwe, Iceland, The USA, Hong Kong,
Sweden, France, Portugal, Canada, Norway, Cyprus, Nigeria, Denmark, New
Zealand, Italy, Venezuela.

Children in most of the countries started school at age six, a few at five and some, mainly in Scandinavian countries, did not start school until the age of seven. However, results showed that the top ten scoring countries had a later starting age. The mean school starting age of those countries was 6.3, compared to the mean of 5.9 in the ten lowest scoring countries. Furthermore, the top scoring countries were also the most economically advantaged. The researchers analysed further the results pertaining to each country's level of development, and found that the trend for older starting ages, which was associated with better results was reversed, (Sharp, 1998). However, Elley (1992) pointed out that the differences between the earlier- and later- starting countries were small, and that children in the later group had largely caught up by the time they reached the age of nine.

Porpodas (1990), in his follow-up study of children attending state kindergarten schools in Greece, investigated two factors. Firstly, whether children, who would go to the first grade at the age of five years and six months, were likely to have difficulties in reading and writing. Secondly, whether the younger and the older children (age difference: 8 months) in the first grade, had any differences in their performance in reading and writing at the end of the first and the second grade.

His findings showed that the chronological age of the children who were in the first grade (5.6 or 6.6 yrs) did not seem to significantly affect the level of reading and writing attainment measured at the end of the first grade. Children's age did not seem to be related, to a great extent, to children's knowledge of grapheme-phoneme correspondences or to their reading and spelling performances. The fact that there is no relationship between the age of the pupils in the first grade and the level of reading and writing attainment is also supported by the results of his earlier study (Porpodas, 1989).

It was also found that at the end of the first grade there was no significant difference in literacy attainment between the young- and the old-first-graders. The similar results of both studies support the view that the factor of the different school-starting age is not crucial for children's attainment of literacy at the end of the first grade (Porpodas, 1990).

Prais (1997), who studied children's mathematics attainment in Switzerland, and in Barking and Dagenham, supports the idea of having flexible school starting ages. He administered a mathematics test to a small number of Swiss and English nine- and ten-year olds. His findings showed that Swiss children, although they were younger, performed better despite starting school a year later. His suggestion is that U.K. schools should allow a four-month flexibility in starting ages, so that older, more able children could go up a year, and younger, less able children could spend longer in pre-school. One of the benefits that he pointed out would be a reduction in the spread of ability within the class, which makes it easier for the teachers to adopt whole-class-teaching methods (Sharp, 1998).

However, Crosser (1991) proposed a counter argument to the above, suggesting that there were academic advantages for summer-born children by delaying entry, particularly in relation to boys' reading attainment. The study looked at the later school attainment of summer-born children who were matched for ability and sex, but differed in relation to their age of entry to school. Nevertheless, the study did not take account of the socio-economic background of the pupils. This factor could have a strong effect on children's performance. Affluent parents tend to postpone enrolling their children in kindergarten, if these children would otherwise be among the youngest in the class. The

following year, the children who were held back would be among the oldest entrants (Crosser, 1991).

Regarding the early U.K. school starting age, it could be suggested that there was very little debate on this issue before it became practice. Woodhead (1989) pointed out that 'the school starting age was not decided on the basis of any developmental or educational criteria. This is the reason for suggesting that there should be a debate about the relation between school admission policies and the early years' curriculum' (Sharp, 1998, p.4).

A recent study by Tymms, Merrell and Henderson (1997) also addresses the above issues concerning the relationship between children's age and learning. They assessed over a thousand children in thirty eight schools at the beginning and at the end of the reception year. The curriculum areas explored were mathematics and reading, and they used a multi-level modelling technique to assess both children's progress and attainment. The results showed a strong relation to pre-test scores, but the scores varied among schools. Children who were older in the year-group, scored better in both mathematics and reading attainment, whereas the results of the study showed that there were no age-related differences in reading progress.

Furthermore, Sharp and Hutchinson (1997) studied the relationship between age and length of schooling to children's school performance. The study investigated the 1995 Key Stage 1 results in a sample of over three thousand children in one hundred and fourteen schools. All children had experienced different lengths of schooling because of different school entry policies. Length of schooling was also related to attainment, since the three seasons of birth showed differential patterns in relation to achievement at Key Stage 1. Among the older (autumn-born) children, the ones who had attended a full reception year did best. However, regarding the younger group (summer-born), the children who had a full reception year did not perform as well as these who were at the same age, but had one or two terms less time at school. Even if other factors were taken into account, such as gender, this relationship would hold (Sharp, 1998).

Related to the above issue about the role of age and length of schooling in children's school performance, it is likely that children will face difficulties attaining learning areas, such as literacy, due to their age. Studies by Langer et al. (1984) and

Weinstein (1968, 1969) have shown that it is likely that children, younger than the rest within a class, will experience emotional difficulties, be labelled as having a learning disability, or are likely to be retained in school. This is also supported by the studies of Barkley (1995) and Garner (1991), which showed that younger children may also be less advanced than the older ones in many cognitive and behavioural skills that facilitate reading acquisition and general learning than the older ones. The older they are, the more they will have developed these skills. Thus, children at the earlier stages of this critical period are at a cognitive disadvantage relative to their older peers (Crone & Whitehurst, 1999).

However, there are arguments which support the view that an early start to schooling is likely to benefit children in many areas. Specifically in relation to reading, there is evidence that starting to read early has beneficial effects on children's reading progress. The question is whether these effects are due to the age of the children, or to some other factors such as the home background, the culture, or the reading instruction. Blatchford and Plewis (1990) and McQuillan (1998) revealed that children who start learning to read early usually do better later. Blatchford et al. (1987) showed in their study that at school entry, children with specific reading-related knowledge tended to be better readers at seven. A study by Blatchford and Plewis (1990) also revealed that children tend to be better readers at eleven years as well. Specifically, children's ability to identify letters, to write their own name and copy a phrase independently at school entry, predict reading at 11 years. Moreover, Tunmer et al. (1985) warn against delaying reading instruction to wait for cognitive maturation. They suggest that it is both wiser and more efficient to provide all reading beginners with a variety of language games and activities designed to develop their linguistic awareness directly (Adams, 1990, p.58). The findings of all these studies are also supported by Riley's (1996) study of children from reception classes in the U.K. She found that children who come to school able to identify alphabet letters, and with an advanced ability to process print, are much more likely to become readers within a few months of arriving at school. The results of Blatchford and Plewis' (1990) second study suggest that there is little to choose between the predictive power of letter naming and letter sounding, although these correlations refer only to the time between the end of reception and Year 1, rather than the time

between the end of nursery and the end of juniors. Children who are able to recognise letters and reproduce them on paper in their reception year appear to progress more swiftly in their reading in later years.

McQuillan (1998) elaborated this view in his study, suggesting that children who can read before they start school usually come from home backgrounds where books are available and children are read to; thus children are largely exposed to print. These parents had not forced their children to read, nor they had tried to adopt any of the formal literacy strategies used in schools. His findings from a small number of experimental studies in the USA with children who were taught to read at the age of five showed that any advantage did not last long, since the later readers had caught up by around the age of eight. Thus, he concluded that the key factor of this advantage was not the age but the presence of supportive adults.

Research suggests that it is an advantage for children to have much exposure to print at home and in school. There appears to be evidence that teaching literacy to children before they go to school is of more benefit for later school performance. However, evidence from experimental studies indicates that the progress of children who started school earlier or later cannot be considered as strong, since the contexts they refer to are different, such as language, culture and educational systems (Blatchford & Plewis, 1990).

As mentioned above, the positive effect on literacy development of training children in phonological awareness and in phonemic awareness before their entry to school seems to be prevalent in many empirical studies (Lundberg et al., 1988; Goswami and Bryant, 1990; Ehri, 2001). Yopp and Singer (1985) have argued that the bottom line is that the role of mental age is not one of limiting what a child can learn, but of limiting the ways in which they can be effectively taught (Adams, 1990, p.59). However, the quality of the training and its effects rely heavily on the teacher's experience of literacy teaching in early years, and the stimuli of literacy in the school environment.

2.7 Literacy development in school context

For many years it was thought that literacy learning started with the beginning of schooling. However, Teale and Sulzby (1986) indicated that literacy emerges in children before they start formal instruction, which means that the preschool period is very important with regard to children's literacy development. Saracho (1990) has argued that 'teachers become a key element in providing an appropriate educational setting for literacy development as they have the role of curriculum designer and organiser of instruction' (Guimaraes & Youngman, 1995, p.41).

2.7.1 Literacy instruction in early years

Early literacy acquisition takes place both in children's homes and in the preschool environment. Thus, the role of the teacher in relation to effective instruction in areas of knowledge, such as phonological awareness and letter knowledge, seems to be very important for children's reading achievement. Ehri (1991) has suggested that reading skill is not picked up simply through exposure to print; it needs instruction and practice in the prerequisites of reading (Ehri, 1991, p.61). Evidence from studies with preschoolers (Bradley and Bryant, 1983, 1985; Bradley, 1987) showed that training in phonological skills has a considerable effect on reading and spelling. These findings stress that early literacy instruction is crucial for children's later reading achievement. Lundberg, Frost and Petersen (1988) suggested in their longitudinal study that the training had a strong effect on children's phonological skills, particularly at the level of the phoneme; later on, the study showed that the effects were extended on the rhyming tasks, and on tasks involving word and syllable manipulation (Brennan & Ireson, 1997).

Byrne and Fielding-Barnsley (1991) also support including instruction in phonemic organisation in the early stages of the reading curriculum. In their project with preliterate children they concluded 'that both phoneme identity and segmentation were related to acquisition of the alphabetic principle when combined with relevant letter-sound knowledge' (Byrne & Fielding-Barnsley, 1991, p.451). Moreover, Morais et al. (1979), as mentioned above, argue that phonemic awareness is a product of instruction and not of maturation. In their study about phonemic segmentation ability in illiterate adults in Portugal, it was suggested that this ability is not attained in the absence of some

specific training (Morais, Bertelson, Cary & Alegria, 1986). Thus, apart from the research evidence that phonological awareness and phonemic awareness are predictive of future literacy, there is also evidence that training in awareness may actually be a great help for children who learn reading and writing, and may also have beneficial effects on their later progress (Liberman & Shankweiler, 1991, p.8).

Perfetti (1991) extended the findings of these studies, proposing that training in phonological skills does not simply give children access to phonemic knowledge; it also affects the child's computational knowledge (such as the ability to make connections between letters that are already known to them), and sounds, of which they have little explicit knowledge. Thus, through training, the structure of the words becomes clearer for children. However, he also suggested that even the evidence of the training studies does not necessarily mean that explicit phonemic knowledge is a strong prerequisite to reading. There is an enabling relationship between the two abilities, but the child needs to be more reflective and analytic with his/her knowledge in order to make rapid progress in reading (Perfetti, 1991, p.42).

Bader and Hilderbrand (1991) support the fact that reading and writing ability does not appear suddenly; nevertheless, they argue that it does not appear only as a response to literacy instruction. Children's preparation for literacy is a long and complex process. The establishment of literacy is made during early childhood and it is strongly affected by the context in which it takes place.

Several studies (e.g. Hiebert, 1981; Barclay, 1991; Lomax & McGee, 1987) have shown that preschoolers seem to learn letter features and names; they can read words presented in familiar contexts and have knowledge of several conventions related to written language, such as directionality, book handling, and differentiation of print from pictures (Guimaraes & Youngman, 1995). Whitehead (2002) indicates in support of this that the real basics of literacy must consist of purposes, motives, and understanding. However, English preschools focus on features such as the punctuation, the phonics, reading aloud to children, and on word lists. Based on this, it would be very interesting to investigate the literacy instruction received by the children in Greek kindergarten. The theories of Smith (1982) and Goodman (1976) have also emphasised that 'reading is not best acquired by an emphasis on decoding and on a conscious knowledge of linguistic

features, but it is better acquired spontaneously and unconsciously by immersion in texts; reading cannot be taught, it is acquired' (Blatchford et al., 1987, p. 16). Further, Ferreiro & Teberosky (1983) have argued that children learn about print by making hypotheses about the written language around them; however these hypotheses are influenced by the quality of the print instances available. Therefore, as Taylor and Logson, (1986) have indicated, 'the nature of written language-related concepts are affected by the quality of the literacy environment to which children are exposed' (Guimaraes & Youngman, 1995, p.41). Relating this to kindergarten as a literacy learning context, it could be indicated that the teacher's role in particular has a great effect on children's literacy development.

2.7.2 Teacher's role in children's literacy development

The foundations of learning to read and write can be established long before children go to school. Giving all children the opportunity to be exposed to rich literacy experiences before they go to school, (if not at home, then in preschools) would be ideal. Teachers are expected to make certain that all children have the chance to have intimate encounters with books. Instruction to read is not enough when the child does not even know what a book is. Learning is more efficient when it is contextualised. Teachers should also not overlook the fact that some children are already familiar with reading and writing due to their home background, which may have provided good role models. In this case a good approach for the teacher will be to capitalise on children's progress and enhance it (Stainthorp, 1989).

Riley (1996a, p.48) has indicated that 'literacy teaching of the early stages of reading is a highly complex, skilled activity; working with young learners demands the most experienced of staff'. Riley (1996a, p.49) further suggested that 'the efficacy in the way that reception teachers organise and implement high-quality learning experiences for children depend on their level of knowledge of the literacy process and the stages of development of the individuals within their classes'. Moreover, she found in her earlier study (Riley, 1994) that the most effective reception class teacher is the one who is not only aware of children's stage of literacy, but also realises their emotional and psychological needs (Riley, 1995). Goodman and Burke (1982), and others (e.g. Riley, 1995), support this, putting forward that 'effective teachers of literacy must appreciate

and know how to use the language competence of learners. They must also understand how reading works as a process by which meaning is constructed from language' (Goodman & Burke, 1982, p.127). Nevertheless, the efficacy of early literacy teaching does not only rely heavily on the adequate literacy material used and on the instruction, but also on the school learning environment that introduces children to literacy.

2.7.3 The literacy learning environment

Clay (1991) proposed that effective literacy teaching takes place in a rich, stimulating and well-organised learning environment. Stainthorp (1989) has suggested that 'teachers in the nurseries should involve the children in many activities that draw their attention to the sound basis of words in order to prepare them for later reading development. Singing, general rhyming games, clapping syllables and becoming aware of letter names and letter sounds can be all useful early achievements' (Stainthorp, 1989, p.185). Halliday (1975) has mentioned that an enabling learning environment for literacy should facilitate the development of a wide vocabulary and the use of grammar. Riley (1995), extending Halliday's suggestion, proposed that the classroom should be a source of rich literacy experience, activity and stimulation that promotes the oral language from which reading and writing will naturally arise. It is important for effective early literacy teaching to provide challenging classroom opportunities in order to engage children in such activities (Riley, 1996a).

Kontos, Miller and Fernie (1992) have also suggested that the enrichment of the play environment in terms of written language usage enhances young children's literacy activity in play (Guimaraes & Youngman, 1995). Likewise, Teale and Sulzby (1985) claim that demonstrating reading and writing and literacy materials to young children, as well as encouraging them, facilitates their attainment of conventional reading and writing. Furthermore, Saracho (1990) stressed the importance of preschool experiences in early literacy, claiming that the case is even stronger for children who have had little or no exposure to written language, because the preschool context will be their first contact (Guimaraes & Youngman, 1995).

Regarding, the way that children acquire their experiences through which they will develop their understandings of and their skills in literacy it is suggested that play

has been the vehicle through which much enabling language practice has occurred before school and can continue to be valuable in school (Riley, 1999).

According to Neuman and Roskos (1992) ecological psychologists suggest in their research (e.g. Quilitch & Risley, 1973; Fein, 1975; Vandenberg, 1981) that variables of materials and setting exert a strong pull on the nature and quality of children's learning through play. Given the potential of environmental factors for learning, then, changes in the structural features of the play environment that are literacy based may have important consequences for children's emerging conceptions of literacy. Roskos (1982) argued that play as a process in and of itself provides a particularly rich medium for children's exploration of literacy: its cultural roles, routines, scripts and tools. Children in play are free to construct microworlds in which actions and objects do not need to conform to reality or any conventional rules. Piaget (1962) and Vygotsky (1962) argued that through these transformations children begin to separate meaning from objects, providing the foundation for understanding other representational systems like written language (Neuman & Roskos, 1992).

Several studies (e.g. Roskos, 1987; Vukelich, 1989; Neuman & Roskos, 1990a; Morrow, 1990a; Neuman, 1991) have investigated the influence of play enriched with literacy tasks and materials on children's literacy development. The results of these studies illustrated that children's collaborative engagement in literacy through play may provide substantive input in their learning about written language as reflected in their discourse. Further, it was indicated that within an enriched play environment children incorporate literacy objects and roles into their play, creating new play themes to express their ideas about literacy. In the process of play the nexus of objects-roles-contexts provide a network immersing children to the language and literacy actions, while simultaneously enhancing the quality of their literacy-based play (Neuman & Roskos, 1992; Roskos & Christie, 2000). Moreover, Neuman and Roskos (1992) argue that children's functional engagement with literacy objects in play settings may serve an important role in their early attempts to gain power and control over written language. Through play, children may explore the cultural tools of literacy, making them a functional and valued part of their own experience (Neuman and Roskos, 1992, p.221).

2.8 The rationale and the aims of the study

Though, as detailed above, there is considerable evidence about early literacy development in English speaking contexts, there are much less data about this in the context of the Greek culture. The rationale for this study is to explore how Greek children develop and implement their literacy skills within a range of tasks. Several studies presented in previous sections of the literature review, with English speaking children provide evidence that indicates how young children develop their reading and spelling skills, and what are the precursors of literacy acquisition. The present study aims to provide more evidence about Greek kindergarteners' initial skills in early reading and spelling as well as in the prerequisites of literacy. Also, a longitudinal approach is taken to enable a study of development over time to be made.

Further, in the existing bibliography relative to early literacy in English speaking contexts it has been suggested that children's experiences of print have a great influence on the development of their literacy skills. Based on this, the present study aims to investigate how Greek young children understand their literacy learning through their experiences of literacy, and to explore the relation between these experiences and children's literacy skills.

Research findings on early literacy worldwide have also indicated that the practices followed by a teacher and her subject knowledge have an effect on children's literacy learning. Related to these, the study also investigates three teachers' views on early literacy and their teaching practices as well as the effect of these on the development of literacy skills of the children studied in this project. The project was undertaken at a time when new literacy policies affecting Greek kindergarten had been implemented by Government initiatives (above introduction section).

The research questions were:

- a) What skills do children have in phonological awareness, letter-knowledge and in concepts about print as well as in reading and spelling on their entry into kindergarten and at the end of it?
- b) Do other factors such as gender and age have an effect on children's performance on literacy tasks on their entry into kindergarten and at the end of it?

- c) Are children's skills in the prerequisites of literacy related to each other, and to their early reading and spelling skills?
- d) What meaning does literacy have for children?
- e) What range of literacy experiences do children report?
- f) What are the teachers' perceptions about early literacy?
- g) How do they make provision for these at school?
- h) In what way does the literacy instruction received in each class influence children's performance on literacy tasks?

The design of the study is longitudinal. The major point of conducting a longitudinal study is to investigate what literacy skills and experiences children have on their entry into kindergarten and at the end of it. The exploration will provide evidence about the effect of the early kindergarten literacy teaching children received on their literacy skills and experiences by the end of the year. The methods used to explore the research questions include testing the children on a number of literacy tasks (to collect data on children's early literacy skills), and semi-structured interviews with children and teachers. The methods used to analyse children's performance were mainly quantitative. However, in some instances qualitative methods of analysis were also used. The data from the children's interviews were analysed using both quantitative and qualitative methods. Finally, teachers' interviews were analysed only qualitatively.

According to the regulations of the Ministry of National Education and Religious Affairs (MNERA) and the Pedagogic Institute in Greece prior to conducting a study it is necessary to have an official permission from these two institutions. In order to gain the permission the researcher has to submit a full report of the aims of the study, of the methods and the research tools used. However, though no consent forms were given to the parents, the researcher and the class teacher informed the parents about the aims and the methodology of the study. If anyone of them did not wish his/her child to participate, was allowed to do it. Prior to the interviews the kindergarteners were asked whether they wanted to take part. The researcher informed them about content of the interview questionnaire. If they felt uncomfortable with the process, they could withdraw.

CHAPTER 3: METHODOLOGY

3.1 Rationale and aims of the pilot study

In order to ensure that the research methods and the research tools chosen were appropriate to serve the aims of the present study, a pilot study was conducted. As Balian (1988) has suggested, the pilot test gives the researcher an opportunity to measure objectively the validity and reliability of the instruments.

The purpose of this pilot study was: a) to ascertain whether the research tools that were being developed were valid and reliable for investigating the research questions, since there are no standardised assessment tools for children of this age in Greek, b) to explore children's knowledge of literacy at that point of time in order to facilitate the choice of the content of the literacy tasks and their range of difficulty and c) to identify where there might be any ceiling longitudinal effects for young children.

For this reason a pre-pilot study was conducted before the actual pilot study. The pre-pilot test was based on a video-recording of one day's literacy teaching in a kindergarten to identify the literacy tasks being implemented by the class teacher. This information facilitated the development of a number of literacy tasks which would be used in the pilot study. Apart from recording children's responses towards several literacy tasks and checking their level of achievement, the following areas were studied: a) children's experiences of and attitudes towards reading and writing in general and b) teacher's views regarding literacy teaching in kindergarten. Studying the way that children understand their literacy skills calls for the use of systematic, reliable and valid assessment methods in order to illustrate children's conceptualisation of literacy learning and the strategies they follow in order to deal with it; hence the research methods followed were the testing and the interview. The participants in the pilot study were considered to be a 'convenience' sample.

3.2 Methods and materials used in the pilot study

3.2.1 Literacy tasks testing

A series of tasks were chosen which the children undertook during the literacy tasks testing. The tasks covered six distinct areas: a) **phonological awareness**, b) **linguistic knowledge**, c) **letter knowledge** d) **concepts about print**, e) **reading** and f) **writing**. There is strong evidence that phonological awareness, letter knowledge and concepts about print are major predictors of reading success; thus these tasks would assess children's skills related to these areas, whilst producing a context for close observation of their attitude towards literacy. The idea of testing children in tasks referring to linguistic knowledge and PA was taken from the teacher's literacy teaching programme during the pilot study. The idea of applying tasks about reading and spelling were taken from other research studies. However, the test items were developed, or in some cases modified by the researcher. The tasks of letter knowledge and CAP were adapted from Clay (1993) after a few modifications. A detailed description of these tasks and of how they were applied is given in Appendix 1. Seventeen tasks were developed and they were as follows:

a) **phonological awareness** (end phoneme sound production; addition of the initial phoneme; syllable counting; and phoneme blending). The rationale of these tasks was to investigate children's phonological awareness and aimed to assess children's ability to implement their letter-sound knowledge and their phonological skills. The test items in all 4 tasks were orally presented to the children (Appendix 1).

b) **linguistic knowledge** (use of the definite article; singular and plural number; diminutives; and identification of structural errors within a sentence). These tasks were intended to assess children's skills in the use of Greek oral language. The first three tasks were adapted from the content of the literacy tasks applied by the teacher during the conduct of the pre-pilot study; the last task was adapted from Clay's Observation Survey (1993). The stimuli used in all tasks were changed in order to avoid having any previous knowledge of these and ceiling effects. Two tasks were orally presented and two had visual stimuli. The way these were applied is described in Appendix 1.

c) **letter knowledge** (letter identification (alphabet response, letter sound response, a word that starts with each letter, word image) with only lower case letters; letter recognition in word context; formation of two phoneme syllables with cards; identification of structural errors within a word). The tasks developed focused on investigating children's knowledge of letter-phoneme correspondence; and on the images making about the graphemes. Children were given all 24 alphabet letters and were asked to say their names and sounds, to describe the letters' patterns and to say a word that starts with each letter sound. Additionally words were given to children to identify which word started with each letter sound. The application of the other two tasks is described in Appendix 1.

d) **concepts about print** (front of book; back of book; from left to right; from top to bottom; from left page to the right page; word by word matching; the beginning of the book; the end of the book; the beginning of the page; the end of the page; the first word of the sentence; the last word of the sentence; the first letter of the word; the last letter of the word; one letter; two letters; one word; two words; and the full stop). The tasks developed by Clay (1979) for assessing concepts about print (CAP) in her work were adapted for use with the Greek language. Nineteen concepts were investigated in order to assess children's conceptualisation and handling of print. A detailed description is given in Appendix 1.

e) **reading** (word reading; and sentence reading). The aim of these tasks was to explore how children develop their reading skills and implement these within a word and a sentence context (see Appendix 1).

f) **writing** (copying sentence; and writing names and words). The rationale of these tasks was to identify how children implemented their writing skills (see Appendix 1).

3.2.1.1 Procedure for literacy tasks' data collection

Eight children were video-recorded working individually on literacy tasks. There was no time limit on their engagement. They were given the seventeen literacy tasks in sequence and they went on to the next task only when they had completed the previous one, or when the researcher decided that the child could not complete the task. The

sequence of the tasks was the same for all participants and the range of the task difficulty was raised gradually. During the tests the researcher prompted children to self-correct. A detailed description of the tasks' procedure is given in Appendix 1. After completion the performance on the tasks was coded, scored and analysed.

3.2.2 Child interview

A semi-structured interview questionnaire consisting of twenty-one questions was used with children (Appendix 2). This type of interview was chosen by the researcher in order to establish a friendlier atmosphere with the children so that they could talk more freely and fluently. The researcher is a qualified early years practitioner and is aware of how to create a rapport between herself and the children. The children's age and their level of understanding were taken into consideration when constructing the questions. Simple words and short questions were used so that they could be more easily understood. Moreover, the children were allowed to withdraw from the study, if they felt uncomfortable or they could refuse to respond when they felt to. The researcher wished not to force the child by any means to respond to any of the interview questions. This is because she did not intend to position the children as donors of data.

3.2.2.1 Procedure for child interview

The children were interviewed individually. Each child was taken to a private and quiet place in order to feel comfortable with the interviewer as well as remaining undisturbed and focused on the questions that were being asked. In many cases prompts were given by the interviewer to initiate the child to recall some of his/her own experiences and answer the questions. In some other cases the interviewer also probed in greater depth or to clear up any misunderstandings of children's responses. Prior to the interview, it was made explicit to them that there were no correct or incorrect answers, that they could express themselves as if they were chatting with a friend and that they could leave the room, if they felt uncomfortable. A tape-recorder was used to record the children's responses, which were later transcribed and analysed qualitatively.

3.2.3 Teacher interview

A semi-structured interview-questionnaire consisting of twenty-three questions was used for interviewing the class teacher (Appendix 3). The construction of the interview questions and the wording used made it clear and unambiguous and raised all the issues relating to early years' literacy, teacher's training and teaching practices. It was made explicit to her that the focus of the study was on getting an understanding of teachers' views on literacy in kindergarten and not on evaluating her teaching practices. Thus, any questions that may cause her any inconvenience or make her feel as if her teaching skills were under evaluation, were avoided.

3.2.3.1 Procedure for teacher interview

The interview took place in a private and quiet place within the school in order to establish a friendly atmosphere, encourage her to feel comfortable, and develop a rapport with the interviewer. Much information about the teacher's views was elicited from an in-depth conversation initiated by the interviewer. A tape recorder was used to record the teacher's responses, which were later transcribed and analysed qualitatively.

3.3 Implications of the pilot study for the main study

The rationale for this pilot study was to ensure that all tasks used in the main study would be suitable and yield results that would help to provide answers to the research questions, as well as obtaining knowledge that emerges from children's literacy development in a Greek context.

3.3.1 Implications for the theoretical framework

The theoretical framework on which the present study is based is the view that reading is a skill that depends on: a) language and b) cognitive skills (bottom up skills: decoding, skills at (e.g. phonological awareness, letter knowledge, concepts about print); and top-down skills: understanding of the processes involved). Specifically, the scope of the present study was to investigate the way Greek kindergarteners develop their literacy

skills and experiences. Their literacy awareness was also explored in relation to the children's environment, and more specifically, to the effects of kindergarten on the children's literacy development; to the provision the teacher made for their literacy learning; and to what literacy experiences the children have from their home background according to their reports.

The three prerequisites known to affect children's literacy development in the English speaking culture (namely, phonological awareness, letter knowledge and concepts about print) were also related to some other factors such as the school class, gender and age. It was also important to explore the relation of this nexus particularly to the Greek language, and compare it to other languages. This framework was adapted in a longitudinal design in order to also investigate the time effect on the development of children's literacy experiences and skills.

Within this framework, the research questions developed in order to yield information about the concepts to be investigated in the main study were: a) what skills do kindergarteners have in phonological awareness, letter knowledge, concepts about print, early reading and spelling b) what are their views on literacy, c) what are their reported literacy experiences at home and in the kindergarten, d) what are the teacher's views on early literacy, e) how does she make provision for it at school?

3.3.2 Implications for the research tools

3.3.2.1 Literacy tasks testing

A number of crucial points emerged regarding the number of tasks and the length of time they took to administer, their validity and reliability in terms of the items' and tasks' suitability, and finally, their presentation.

3.3.2.1.1 *Number of tasks*

The children's responses to the tasks showed that there were far too many, which resulted in the children becoming tired. Applying seventeen tasks in one session seemed to be overloading young children, which, inevitably, had a great influence on both their attitude towards the tasks and their performance. For this reason either a task reduction or

administering them in more than one session was indicated. Reducing the tasks was shown to be more appropriate, since a number of tasks were shown to be unsuitable for longitudinal work with children of this age. There was a ceiling effect with some tasks. In addition investigating the effect of time on some of the language tasks used in the classroom were not directly related to children's literacy knowledge (use of definite articles, singular and plural number, diminutives, identification of structural errors within a sentence, identification of structural errors within a word, copying a sentence). Also some other tasks appeared to measure the same skill. This means that their application would just make the testing schedule overloaded for young children (the letter recognition in a word context, formation of two-phoneme syllables with cards, end-phoneme sound production). These tasks were, therefore, not administered in the main project. The number of the tasks was, therefore, reduced to eight. However, apart from these tasks, another reading task (text reading) was added in the testing schedule, so the number of the tasks in the main study was nine.

3.3.2.1.2 Validity and reliability of the tasks

Some of the eight tasks that remained were also changed in order to create a testing schedule more valid and reliable for investigating the aims of the main study, and simultaneously more suitable for young children. Moreover, it was important not to have ceiling effects in any task, otherwise it would not be feasible to meet the assumptions for a longitudinal work. To ensure this, changing the addition of the initial phoneme task was suggested; it was, therefore, substituted by an identification of the initial grapheme task, which also assessed children's skills to isolate the initial letters in a set of three words, and identify visually the differences between them.

Likewise, it was also important not to have floor effects, which would suggest that the task was too hard and unsuitable for young children, and similarly inappropriate for a longitudinal study. So, in an attempt to avoid overloading, tiredness, or even frustration, the syllable counting task was replaced with an initial phoneme blending task. This would also assess children's phonological awareness and specifically their skill to aurally blend the initial phoneme with the rest of the word. This task also supplements the identification of initial grapheme task, which refers only to the visual recognition of the

initial letter. The decision to add in an extra phoneme blending task was based on the fact that a great deal of crucial information would be yielded regarding children's knowledge of phonological awareness from their performance on blending at phonemic level. Further, it was intended to assess children's skills on onset and rhyme blending. However, this was not possible, due to the fact that it is practically impossible to construct phonological tasks with Greek monosyllabic words. There are too few monosyllabic nouns in the Greek language to generate the necessary number of items. Additionally, regarding writing, the pilot study showed that the task of copying the sentence would not be appropriate for a longitudinal study and thus the task was eliminated.

In the whole range of tasks the use of consonant digraphs e.g. **μπ** /b/, **ντ** /d/, **γκ** /g/, **γγ** /g/, **τσ** /ts/, **τζ** /dʒ/, the use of vowel digraphs e.g. **ου** /u:/, **ει** /i/, **οι** /i/, **αι** /e/ and of vowel combinations e.g. **αυ** /af/ or /av/, **ευ** /ef/ or /ev/ was avoided, because children were not expected to know them and it might have been confusing for them. However, in the text reading task of the main study there were some words, such as 'και' (and), 'περνουσε' (passing), that included a vowel digraph, and 'κόκκινο' (red), that included double consonants (geminate letters). Nevertheless, the words were not replaced because important information might be missed out regarding children's reading skills.

3.3.2.1.3 Suitability of the tasks' items

From the piloting of the letter identification task, it emerged that the task needed modification regarding its items in order to be more suitable for both the main study and the sample that it addresses. Apart from asking children to identify the letter names and the letter sounds, also asking them to say a word that starts with each letter's phoneme or to describe the letter forms was overloading them (see Appendix 1). This called for a modification. Assessing children's skills to identify just the letter names and the letter sounds is quite sufficient to show their level of alphabet knowledge, and the process is not very tiring for them. Also, it should be noted that in the pilot study children's letter knowledge was assessed only in lower case letters, because the class teacher suggested that children could not recognise the upper case letters. However, in the main study both

lower and upper case letters were assessed so that important data would not be missed out.

Assessing children's skills in reading the sentence 'Φοράω ένα κόκκινο καπέλο' (Forao ena kokino kapelo- I am wearing a red hat) showed that the geminate letters 'κκ' in the adjective 'κόκκινο' (kokino-red) confused children while they were trying to sound out the word, and they were pronouncing it twice. Thus, it was decided to change this item to 'κίτρινο' (kitrino-yellow), so that there would not be any geminate letters that were hard for children and confusing.

Moreover, it was decided that significant data would be yielded if children's skills on text reading were further assessed. However, it was not appropriate to apply a text reading task at the beginning of the kindergarten year due to the fact that children would find it hard and frustrating. Nevertheless, at the end of the year it seemed that it would be less hard for them, and that is why it was included in the literacy tasks that were under investigation. However, having both sentence and text reading tasks at the end of the year would seem to much for kindergarteners; thus, the sentence reading task was replaced with text reading task.

Regarding the concepts about print task, apart from being time-consuming, children's attitudes showed that they found some concepts difficult (e.g. show one or two letters, the full stop, the first and last word of a sentence, one or two words, the stressed sounds etc.) and finger pointing to all nineteen concepts quite tiring and frustrating. These concepts that appeared to be difficult for kindergarteners were designed by Clay (1989) for older children. Thus, these concepts were dropped in the main study. So, it was considered to be sufficient for the main study and suitable for youngsters to structure this task by focusing on assessing only the early reading concepts: the beginning and the end of the story, the directionality (left-right, top-bottom, left page-right page), and the line sequence, in order to illuminate children's technical skills in dealing with print. Thus, the concepts under assessment were reduced to six. This is consistent with the work of Brugelmann (1986) mentioned earlier, who also reduced some items in his study from the CAP test because German school beginners found some text features and questions difficult. These, plus the results from studies conducted in Greece that children find some

concepts difficult even at the end of the first or second grade led to a modification of this task.

3.3.2.1.4 Presentation of the tasks

After trialing the letter identification task it seemed that the presentation of the task made it time-consuming and tiring for youngsters, and in need of modification. Instead of presenting cards with every single alphabet letter, which actually takes a lot of time, it was decided that it would be better in the main study to have an A4 format page with the alphabet letters printed in a large font, so that it would be clear and all the alphabet letters would be together. This was also suggested as appropriate for the presentation of all literacy tasks.

Due to the children's familiarity with the literacy tasks, it was thought unnecessary to have practice items in each task. Their results on the tasks indeed showed that they did not have any difficulty in understanding the task. However, in the main study it was very important to have practice items before the testing items in each task, so that children had a clear understanding of the task prior to their engagement in it, thus avoiding any misleading results. Moreover, a small number of words were used in order to avoid tiring children.

3.3.2.2 Child interviews

The interview schedule for children was shown to be workable and suitable for eliciting their viewpoints about literacy. The schedule was structured on a number of themes according to which children's experiences of literacy were being investigated. Grouping the questions in relation to their content made it easier for the respondents to develop their views; thus the responses were coherent, which made the interview easier to analyse.

However, it seemed that there was a need to initiate a more in-depth conversation with them, in order to make children's experiences of literacy more explicit and yield more information on this issue. That is why a number of questions were added to the interview schedule of the main study. These were mostly exploratory and explanatory

questions, and referred to issues and factors that are strongly related to young children's attitudes towards literacy. On the other hand, developing a semi-structured interview schedule made it more flexible for the interviewer to ask more questions that could shed light on children's views on literacy.

Nevertheless, the interview schedule of the main study had to be both comprehensive and quite short so that children would not need to take a lot of time on each question, whilst also taking their views on it into account. The issue of time and the children's rights to withdraw, when having to deal with young children, called for careful handling of the interview schedule in order to be practical and effective.

3.3.2.3 Teacher interviews

From the trial of the interview schedule for teachers it emerged that it covered quite a lot of important areas regarding teacher's views on and practices in early literacy in the Greek context. It was comprehensive, and gave the teacher the opportunity to develop her ideas about dealing with literacy within a kindergarten classroom; to give an account of her literacy teaching methods and practices; and to make her own critique of all the factors pertaining to it. Its length was not so extended; the twenty-two questions seemed quite cohesive, which was also suggested by the fact that the teachers' views seemed to unfold fluently.

This interview schedule was developed according to a number of themes aimed at covering the most crucial issues regarding early literacy from the teacher's point of view. This resulted in changing the order of some questions so that there was a clear distinction among the themes and repetition was avoided. Having a semi-structured interview schedule grouped into themes made analysis easier and facilitated the emergence of new data.

A flexible interview schedule also allowed the interviewer to deal with some further issues relevant to literacy that were brought up by the interviewee, adding even more information. The supplementary question at the end of the schedule gave the teacher the opportunity to raise any issues that had not been mentioned so far. So, even at that point, reference could be made to issues that had not been mentioned.

The validity of both interview schedules were assessed in terms of whether the interview questions covered the research areas intended (as well as yielding the information that could illuminate both children's experiences of and views on literacy), and teacher's views on teaching early literacy and the factors involved in it. Regarding the validity of teachers' responses it could be said that it can be tested by comparing them with children's accounts. Adding more questions which were thought to supplement the children's interview schedule, and slightly changing the order of the questions in the teachers' interview schedule, made them respectively even stronger with regard to validity. The interview schedules' reliability was ensured by the fact that the responses were consistent, since the questions concerned the respondents' views, without any intermediary event that might affect the responses.

3.3.3 Implications for the sampling

The pilot study took place in a suburban area of Athens where working class families predominantly lived. However, it was not possible to carry out the main study in the same kindergarten. Thus, it had to be ensured that the sample of the main study would be homogeneous in terms of the socio-economic status. The participants' background in this case was middle-class.

3.4. *The research design*

Based on the findings that occurred from the pilot study, the research design of the present study, in terms of exploring the development of literacy amongst children in Greek kindergartens, investigated what are the kindergarteners' skills in the prerequisites for literacy (phonological awareness, letter knowledge, concepts about print) and in early reading and spelling; how these skills change during their time in kindergarten; and what the children's experiences of literacy are. Moreover, in order to fully explore the patterns of the relationships among the elements that have a strong effect on children's literacy development and learning, the teachers' views on literacy and their literacy teaching practices were investigated. Additionally, through children's responses regarding their experiences in literacy, evidence was provided about the family's provision for literacy.

Finally, this study also explored the effect of other factors such as time, instruction, gender and age on the above data in order to yield more evidence about young children's literacy knowledge in the Greek context. The research design which was followed is a longitudinal and correlational investigation of children's literacy skills and experiences over a 12-month period, and mixed methods were used. The first measurement took place in December 2001 and the second in June 2002. The school year started in September and the children were tested once they had settled into kindergarten but before they received any literacy teaching. Specifically, the research design of the study involves:

- a) testing of children's literacy skills and questioning methodology to elicit children's views,
- b) questioning technique for eliciting teachers' attitudes and approaches to literacy education

The semi-structured interview was chosen as a research method to highlight the young children's experiences of and views on literacy as well as their teachers' views on early literacy and their teaching practices. Using a more flexible type of interview would be more successful in yielding all the information relevant to the research objectives for both children and teachers. Moser and Kalton (1977) argued that the semi-structured interview enables the interviewer to be more flexible in interview planning, whilst giving the interview a set form and ensuring that all the relevant topics are discussed. Robson (1993) claims that the interviewer can modify the interview schedule based on the perception of what seems the most appropriate in the context of the conversation, change the wording, explain more and leave out what is inappropriate for a particular interview or add more appropriate questions. Testing is the other research method chosen to investigate children's skills on literacy tasks. The choice of this method was based on the fact that it was the most appropriate way to explore the way children cope with tasks on literacy and assess their performance.

In the present study, mixed methods were used to investigate the issue from different perspectives. The use of multiple methods (triangulation) is beneficial because it reduces any inappropriate uncertainty (Robson, 1993). Using multiple methods enhances interpretability, because it allows the researcher to investigate the findings from

alternative perspectives and yields more data. This study in particular, which also investigates the factors that seem to have a strong effect on children's literacy, allows the researcher to find the relation between children's literacy experiences and learning in the school environment. The purpose of undertaking longitudinal and correlational work is to investigate the development of literacy in Greek kindergartens, more specifically what children's literacy skills and experiences are, how these change over time, and in what way the instruction received at school, or other factors (such as gender and age), contribute to this change. The design of the present study met the ethical guidelines of the School of Psychology and Human Development in the Institute of Education and the Revised Ethical Guidelines for Educational Research (2004) of BERA (British Educational Research Association), and the research project was conducted with the consent of the Ministry of National Education and Religious Affairs, and the Pedagogic Institute in Greece ($\Phi.15/1348/\Gamma 1/1169$).

3.5 The sample

The participants were fifty four children who attended three kindergarten classes located in suburban areas of Athens, Greece. Two of the classes were within the same school (classes A and B), and one was from a different school (class C). Both schools' districts included predominantly middle-class families. There were not any children of other nationalities or ethnic groups within these classes. Two children were excluded from the study because their age was over six years at the first testing. Children were further categorised as being younger or older kindergarteners. Kindergarteners were defined as 'young' when their age was between 4 and 5 years old when first measured at Time 1 (T1); and as 'old' when their age was between 5.1 and 6 years old at Time 1 (T1). These differences in age occur because the age of entry to kindergarten varies from four to five years. Since attendance is not compulsory, some children may start kindergarten at the age of four and some at five. The exploratory analysis showed that all three kindergarten classes (opportunity sample) were similar in relation to their mean age (Table 3.1). All participants had the same length of time in kindergarten classes, even

though the younger ones were considered to be cognitively less advanced. This would ensure that additional analyses relative to age group could be carried out.

Table 3.1: Mean age of each class (in months) at Time 1 and Time 2

Class	Time 1				Time 2			
	N	Mean	SD	Range	N	Mean	SD	Range
A	18	59.50	5.58	22	18	65.39	5.35	22
B	16	62.06	7.84	23	16	68.06	7.84	23
C	20	64.05	6.37	21	20	70.05	6.37	21
Total	54	61.94	6.76	24	54	67.91	6.71	24

3.6 Methods and materials of the main study

3.6.1 Schedule of the literacy tasks testing

Testing was used as a research method to investigate children's literacy skills and experiences which help them learn to read and write. A series of nine literacy tasks were undertaken by kindergarten children in order to identify their level of literacy skills. The tasks covered five distinct literacy areas: a) phonological awareness, b) letter knowledge, c) concepts about print, d) reading and e) spelling. Particularly, these tasks were piloted and modified in order to serve the research questions. These are:

- 1) **Phonological awareness**
 - a) Initial phoneme blending
 - b) Phoneme blending

- 2) **Letter knowledge**
 - a) Letter identification (upper and lower case)
 - b) Identification of the initial grapheme

- 3) **Concepts about print**
 - a) The beginning of the story
 - b) The end of the story
 - c) From the left to the right
 - d) From the top to the bottom

- e) From the left page to the right page
- f) Line sequence
- 4) **Reading**
 - a) Word reading
 - b) Sentence reading
 - c) Text reading
- 5) **Spelling**
 - a) Spelling names and words

3.6.1.1 Procedure for the literacy tasks testing

Children were video-recorded working individually on literacy tasks. The setting was a private room within the kindergarten. Children were introduced to the procedure and notified about the video recording and the reason for conducting this project. The children had the right to withdraw at any time, if they felt uncomfortable. If a parent did not approve his/her child's participation in this project, the child did not take part. The eight literacy tasks were presented at each testing time in sequence; the child proceeded to the next task only if s/he had completed the previous one or if the researcher realised that the child was unable to complete it e.g. if the child stopped participating or when s/he was struggling to find the answer and was getting frustrated. Children were prompted to make self-corrections. The sequence of the tasks was the same for all children and the range of tasks' difficulty was gradually raised. The video camera focused only on the child. The duration of the tasks was approximately 15-20 minutes. During the second measurement at the end of the year the task of sentence reading at Time 1 was substituted by a text reading task, where children were asked to read a short passage taken from the reading book of the first grade.

The children's responses to the literacy tasks were entered up and using the specially developed coding scheme (Appendix 8) were coded, scored and quantitatively analysed. Moreover, a statistical analysis of children's scores was made, as well as a qualitative error analysis, in order to assess the level of their literacy knowledge.

3.6.2 Schedule of the child interviews

The semi-structured interview was chosen as a research tool to investigate kindergarteners' views and attitudes towards literacy as well as their experiences of

literacy. Through the interviews the study sought to shed light on the views that children had on reading and writing, and on what literacy experiences they had from home and school settings. This particular type of interview was chosen in order to have the flexibility to ask the interviewees more questions to clarify their responses and to make young children feel that it is a friendly conversation and not a structured interview. The children's semi-structured interview questionnaire was piloted and modified in order to serve the research objectives of the present study. The interview questionnaire used at T1 measurement (Appendix 4) consisted of twenty-seven questions covering four distinct areas:

- a) children's views on books and reading; which printed material they enjoy and the reasons why*
- b) children's home literacy and stimuli to reading and writing*
- c) reading in the school environment; their perceptions about the class teacher in initiating story-telling or any other activity and their responses*
- d) children's perceptions about literacy and their practical experience of reading or writing something by themselves*

The interview questionnaire used at T2 measurement (Appendix 5), structured in order to yield more data regarding children's views on literacy at the end of the kindergarten year, consisted of twenty-four questions covering four distinct areas:

- a) children's views on dealing with reading and writing*
- b) children's views on their teacher's early literacy teaching*
- c) children's views on learning early literacy at school*
- d) children's views on practising reading and writing at home and the role of their parents*

3.6.2.1 Procedure for child interviews

Children were interviewed individually. Each child was taken to a private and quiet place to establish a rapport with the interviewer, ensure their focus on the questions being asked and, simultaneously, avoid any disruptions. Prompts were given by the interviewer to help the child in recalling some of his/her own experiences, to respond to the

questions, to perhaps investigate more thoroughly, or to clear up any misunderstandings of children's responses. Prior to the interview, the interviewer introduced herself explaining that she was going to ask questions about reading and writing, for which there were no correct or incorrect answers, and that this was a friendly talk. Again the children had the right to withdraw at any time. The interviews were tape-recorded, transcribed and analysed (Appendix 11). The duration of the interview was 10-15 minutes.

3.6.3 Schedule of teachers' interviews

A semi-structured interview questionnaire was developed to draw out an account of the teachers' views and attitudes towards all the issues relating to early years' literacy, teachers' training and teaching practices. The interview questionnaire was modified as a result of the pilot study (see above).

The interview questionnaire at T1 (Appendix 6) consisted of twenty-three questions, which covered three distinct areas:

- a) *teacher's professional and in-service training, and her teaching experience*
- b) *teacher's teaching practices and her views on teaching literacy in kindergarten*
- c) *the implementation of the new curriculum regarding literacy in kindergarten and the ways they deal with it; parents' role in children's literacy learning as perceived by the teacher*

At the end of the interview questionnaire there was a supplementary question intended to give the interviewee the opportunity to raise any relevant issues that had not been mentioned.

The interview questionnaire at T2 (Appendix 7) structured in order to yield more data regarding teachers' views, consisted of twenty-two questions, which covered five distinct areas:

- a) *teachers' teaching practices regarding literacy*
- b) *teachers' views on children's responses towards literacy tasks*
- c) *teachers' views on early literacy*
- d) *teachers' views on the curriculum*
- e) *teachers' views on parental involvement in children's literacy learning*

3.6.3.1 Procedure for the teachers' interviews

The interview took place in a quiet place within the school in order to make the teacher feel comfortable and at ease with the interviewer. Prior to the interview the interviewer informed the interviewee about the confidentiality and anonymity of the interview. The interviewer initiated an in-depth conversation to draw out all the relevant information about teachers' views and attitudes towards early literacy. The interviews were tape-recorded, transcribed and analysed (Appendix 12). The teacher interview lasted 20-30 minutes.

3.7 Methods of analysis and interpretation

3.7.1 Quantitative analysis

The quantitative analysis of the results on children's literacy tasks was based on the Statistical Package for the Social Sciences (SPSS). The results were coded (Appendix 8) and put into the computer. A statistical analysis of what emerged from the present empirical study was then carried out. The particular analysis was designed to identify children's level of literacy skills; to explore the effect of time and of other factors such as the instruction, gender and age; to make inferences about the relationships between the variables and to provide significant information about the study.

3.7.2 Qualitative analysis

The qualitative analysis of the results on children and teachers' interviews was based on giving an account of their views, and on the interpretation of them, in order to explore the patterns between the responses of the interviewees. A qualitative analysis was further made of the errors made in certain literacy tasks.

CHAPTER 4: Phonological Awareness

The role of phonological awareness in the children's literacy acquisition has been mentioned in the Literature Review chapter.

4.1 Purpose of the investigation

The present investigation was undertaken to assess Greek kindergarteners' phonological awareness at the start and at the end of the kindergarten year. Children were first tested during their first term and then at the end of the year (June). The teachers had not started teaching the early literacy syllabus until January. The major purpose of the investigation was: to investigate kindergarteners' skills in phonological awareness at phonemic level; explore their skills in manipulating phonemes at the beginning of the year; determine whether these changed during their time in kindergarten and whether the age, the gender, and the school class had any effect on their performance on phonological awareness skills by the end of the kindergarten year. Acquiring phonological awareness, gradually understanding the phonemic character of the Greek language and distinguishing the words' constituent sounds are considered some of the aims of the new literacy curriculum of Greek kindergarten.

4.2 Materials

The two phonological awareness tasks that were used in the main study were the initial phoneme blending task and phoneme blending task. Both tasks assessed children's skill to aurally blend the phonemes in order to form words. The same testing material was used at both measurements. The testing items of each task are presented in the Appendices 9 and 10.

4.3 Procedure

Children were video-recorded working individually on phonological awareness tasks. The video camera was used for recording children's responses to the task to ensure reliability of data collection. The setting was a private room within the

kindergarten. Each individual was introduced to the procedure and notified about the video recording. In the initial phoneme blending task the researcher told them that they were going to play a game with words. She would tell them some words in a funny way and they would be asked to say which words she was pronouncing. The initial phoneme of the testing word was pronounced and then the rest of the word was pronounced. The child was asked to aurally blend the initial phoneme with the remained part of the word in order to form it. The order the testing words were presented was the same for all children. The children were prompted to make self-corrections and asked to continue with the next testing item when they could not find the word or when they could not complete the task. An example was also given first by the researcher and then a practice item followed, addressing to the child.

During the phoneme blending task the researcher again told them that they were going to play a game together. She explained that she would speak in a special way and they would have to ‘translate’ what she was saying by blending the component sounds together e.g. *we are going to play a game where I will be saying some words in a special way pretending I am an alien from another planet and you will have to find the words I am saying*. A practice word was given to them and children were notified that they could make self-corrections. When the child could not find the right word they proceeded to the next testing item. The focus of the video camera was only on the child. The estimated duration of the tasks was 3-5 minutes, depending on each case. The same procedure was followed for both phonological awareness tasks at both testing times.

Children’s responses were coded, scored and quantitatively analysed. Each correct response was scored 1 point; thus each task had a total of three. A total phonological awareness score was obtained and analysed. Further analyses were conducted relative to the individual phonological awareness tasks. An exploration of children’s performance on PA was also made in relation to children’s school class, gender and age. Moreover, children’s performance on PA was also qualitatively analysed by dividing children into three ability groups (‘poor’, ‘intermediate’ and ‘good’) in order to describe further their phonological awareness skills.

4.4 Results

4.4.1 Phonological awareness composite scores at T1 and T2

The distribution of phonological awareness composite scores at both T1 (Fig. 4.1) and T2 (Fig. 4.2) was not normal but rather negatively skewed. Specifically, it is shown in Fig. 4.1 that more than half of the children had good knowledge of phonological awareness since the beginning of the year. However, at T2 (Fig. 4.2), though the number of children who scored at ceiling increased, the mean performance was static. Having normally distributed scores in the population from which a researcher has drawn the sample is one of the assumptions required in order to use parametric statistical tests when analysing the data. However, in social science research lack of normal distribution in scores is a common situation. Pallant (2001, p.98) states that ‘according to some statistics writers most of the approaches are fairly ‘robust’; that is, they will tolerate minor violations of assumptions, particularly if you have a good size sample’. This is further supported by Howell (1997), who emphasises the robustness of the parametric t-tests to violations of their assumptions, and the loss of power incurred by the use of the equivalent nonparametric tests (Kinnear and Gray, 2000, p. 10). In the present study the sample size is considered to be large (N=54). Cone and Foster (1993, p.179) argue that ‘usually parametric tests are more powerful than nonparametric ones, so a researcher will generally want to use a parametric test’.

Another assumption that needs to be met in order to perform parametric tests is the homogeneity of variance. Pallant (2001, p.172) suggests that ‘if equality of variance is not the case in a study, then again there is no reason for rejecting the use of parametric tests, since analysis of variance is reasonably robust to violations of this assumption, provided the size of groups is reasonably similar’. Hence, Kinnear and Gray (2000, p. 10) suggest that ‘provided the data show no obvious contraindications, such as the presence of outliers, marked skewness, or great disparity of variances, a t-test should be used’. In the present study the groups that comprise the sample are similar.

Figure 4.1: Distribution of children's scores in PA at T1

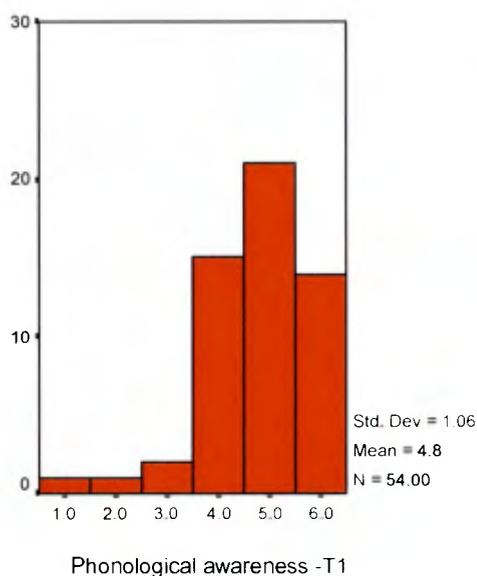


Figure 4.2: Distribution of children's scores in PA at T2

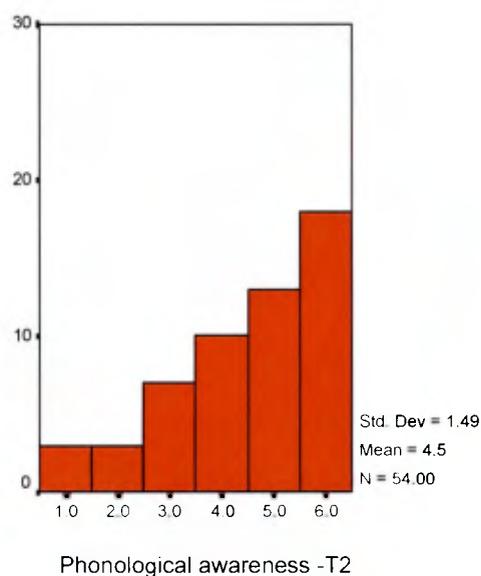


Table 4.1: School class means and standard deviations on phonological awareness composite scores at T1 and T2

Phonological awareness	Time 1			Time 2	
	N	M	SD	M	SD
Total Cohort	54	4.8	1.05	4.5	1.48
Class A	18	4.33	1.02	3.88	1.90
Class B	16	4.87	.88	4.75	1.29
Class C	20	5.1	1.11	4.85	1.03

One scope of the analysis of the present study was to investigate children's overall scores on the phonological awareness tasks at both testing times. Table 4.1 presents children's composite scores on the phonological awareness tasks in terms of the total cohort and of their school class. A mixed between-within ANOVA was performed. The analysis showed that there was no significant effect of time on children's phonological awareness scores (Wilks' Lambda= .962, $F(1,51)= 1.99$, $p= .16$, partial eta squared= .038) Likewise, there was no interaction between time and school class (Wilks' Lambda= .991, $F(2,51)= .22$, $p= .8$, partial eta squared= .009). However, a between

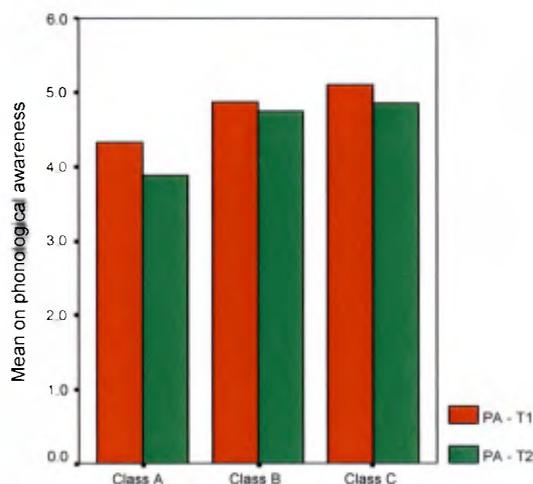
groups effect was found ($F(2,51)= 3.59$, $p= .035$, partial eta squared= .12). Cohen (1988) has asserted that an eta squared value of .01 shows a small effect, of .06 moderate effect, and of .14 a large effect (Pallant, 2001). Analysing further these results, an independent samples t-test was performed and indicated that only at T1 did class A significantly differ from class C ($t(36)= -2.19$, $p= .035$). Nevertheless, there was no difference between classes at T2 ($F(2,51)= 2.417$, $p= .099$). Exploring the improvement made by each class it illustrated that none of them showed any progress (Figure 4.3). These findings suggest that basically there was no change in phonological awareness from T1 to T2. Nevertheless, the fact that there was a significant mean difference between class A and C implies that children in class C started off having better phonological skills than class A. This finding leads to making inferences about the effect of home environment on children's in class C phonological awareness skills, resulting in scoring better than children in class A upon their entry into kindergarten.

According to teachers' reports only teachers B and C applied tasks in their literacy programmes relative to phonological awareness. However, though children in class A did not receive any instruction in PA, they scored similarly to children in class C by the end of the year. Thus, inferences can be made relative to children's dealing with literacy and the development of PA or about the effect of the Greek transparent orthography on the children's phonological skills. It might also have been expected that children in class C could have reached ceiling at the end, because the instruction they received might have capitalised on their prior knowledge. The fact that there was static performance on PA may be because six months of instruction were not enough to show a developmental effect or it may be that children should have received more systematic instruction on PA in order to show some progress.

Following up the analysis of children's composite scores on phonological awareness, the data were explored relative to gender. The analysis showed that there was no between groups effect ($F(1,52)= 1.010$, $p= .319$, partial eta squared= .019). Similar were the results relative to age, where no age group effect was found ($F(1,52)= 1.548$, $p= .219$, partial eta squared= .029). These suggest that gender and age did not appear to influence children's scores in phonological awareness. Because no developmental effect was found for performance on the composite phonological awareness score, further

analyses were conducted for the initial phoneme blending task and the phoneme blending task separately. These are reported below.

Figure 4.3: School class phonological awareness composite scores at T1 and T2



4.4.2 Initial phoneme blending

Table 4.2: School class means and standard deviations on initial phoneme blending at T1 and T2

Initial phoneme blending	N	Time 1		Time 2	
		M	SD	M	SD
Total Cohort	54	2.39	.68	2.31	.84
Class A	18	2.17	.86	1.89	1.02
Class B	16	2.25	.58	2.56	.73
Class C	20	2.70	.47	2.50	.61

Table 4.2 shows the scores of total cohort and of each class on initial phoneme blending. The analysis of the mixed between-within ANOVA indicated that there was no effect of time (Wilks' Lambda= .997, $F(1,51)= .17$, $p= .68$, partial eta squared= .003) or any interaction between time and class (Wilks' Lambda= .933, $F(2,51)= 1.82$, $p= .17$, partial eta squared= .067). Nevertheless, there was a significant between groups effect ($F(2,51)=5.34$, $p= .008$, partial eta squared= .173). The one-way ANOVA performed to

investigate the differences between classes revealed that there was a significant difference between classes at both T1 ($F(2,53)= 3.7, p= .032, \text{partial eta squared}= .13$) and at T2 ($F(2,53)= 3.9, p= .028, \text{partial eta squared}= .13$). Post-hoc comparisons at T1 indicated that class A was significantly different from class C ($p=.039$). Additionally, at T2 class B was significantly different from class A ($p= .046$). Investigating any changes made by each class from T1 to T2, it was shown that there was no change. These findings suggest that children’s performance on initial phoneme blending was similar at T1 and T2. However, differences were found between classes at both T1 and T2, with class A doing significantly worse than C at T1, and significantly worse than B at T2.

Children’s scores were further investigated in terms of their gender. The analysis did not show any gender differences in children’s scores ($F(1,52)= .43, p= .51, \text{partial eta squared}= .008$). Similar to these findings were the results from the analysis relative to age ($F(1,52)= .95, p= .33, \text{partial eta squared}= .018$). Thus, gender and age were not found to have any influence on children’s performance on initial phoneme blending.

4.4.3 Phoneme blending

Table 4.3: School class means and standard deviations on phoneme blending at T1 and T2

Phoneme blending	Time 1			Time 2	
	N	M	SD	M	SD
Total Cohort	54	2.39	.74	2.19	.87
Class A	18	2.17	.71	2.00	1.03
Class B	16	2.63	.50	2.19	.75
Class C	20	2.40	.88	2.35	.81

Analysing the children’s performance on the phoneme blending task (Table 4.3) it was found that there was significant effect of time (Wilks’ Lambda= .925, $F(1,51)= 4.13, p= .047, \text{partial eta squared}= .075$). However, no between groups effect ($F(2,51)= 1.14, p= .32, \text{partial eta squared}= .043$) and no interaction between time and class (Wilks’ Lambda= .958, $F(2,51)= 1.11, p= .33, \text{partial eta squared}= .042$) were found. A paired

samples t-test was further performed to explore the performance of each class through time and it was found that the mean score of class B had fallen by T2 ($t(15) = 2.41, p = .029$). The results suggest that though it appeared that there was a time effect, more detailed analysis localised this at a significant fall made by class B, which further indicates that children did not seem to have secure skills in phoneme blending task.

Children's scores on phoneme blending were further investigated relative to their gender. No differences were found in mean scores for boys and girls ($F(1,52) = 1.003, p = .32$, partial eta squared = .019), suggesting that gender had no effect on children's performance. Likewise, the analysis in relation to age illustrated that there were no differences in means between younger and older kindergarteners relative to phoneme blending ($F(1,52) = 1.207, p = .27$, partial eta squared = .023). Thus, though younger children were less cognitively advanced, they were found to have similar skills in phoneme blending to older kindergarteners.

4.4.4 Further analysis of children's scores on phonological awareness

Table 4.4: Number of children of each class on phonological awareness at T1 and T2

		Time 1				Time 2			
		Class			Total	Class			Total
		A	B	C		A	B	C	
Number correct on PA	1	1	0	0	1	3	0	0	3
	2	0	0	1	1	2	1	0	3
	3	1	1	0	2	2	2	3	7
	4	6	4	5	15	4	3	3	10
	5	10	7	4	21	1	4	8	13
	6	0	4	10	14	6	6	6	18

Analysing the children's performance on phonological awareness (Table 4.4) it was found that fourteen children had reached ceiling at T1. This suggests that those children appeared to have no room for improvement by the end of the kindergarten year. Nevertheless, only seven of them gained ceiling score at T2. The rest of them ($n = 7$) scored lower, which indicates that their skills were not yet secured and regressed. Thus, though the results at T2 showed that ceiling scores increased to eighteen, the distribution

of scores in each class indicated that some children scored lower at T2, showing a slight regression.

A further analysis was conducted. Children were divided into three groups (poor, intermediate, good) relative to their performance on phonological awareness. They were classified as ‘poor’ if they scored 0-2; ‘intermediate’ if they scored 3-4; and ‘good’ if they scored 5-6. These categories were adapted from Ehri and Wilce’s (1985) study about children’s ability to read words for describing children’s phonological awareness skills. The only difference was the use of the term ‘intermediate’ instead of ‘average’ as in the Ehri and Wilce study. At Time 2 five out of seven children, despite scoring lower, remained in the ‘good’ group and two regressed to ‘intermediate’ and ‘poor’ groups respectively. It was evident at T2 that although there were children who scored lower, the majority of them still had good phonological awareness skills. The number of children in ‘good’ and ‘intermediate’ groups at T1 was similar to T2. Nevertheless, there was a small increase in the ‘poor’ group. All three classes’ performance seemed to be similar at both testing times.

Table 4.5: Number of children classified as having ‘poor’, ‘intermediate’ and ‘good’ knowledge relative to phonological awareness at T1 and T2

Time 1	Time 2			Total
	Poor	Intermediate	Good	
Poor	1	1	0	2
Intermediate	2	9	6	17
Good	3	7	25	35
Total	6	17	31	54

Table 4.5 presents the number of children in each performance group at each testing time, and how they shifted from T1 to T2. Investigating the association between children’s performance at T1 and T2, the chi-square test indicated that there was significant association between them, Pearson Chi-square= 44.261, df=25, p= .01. Moreover, the results suggested that more than half of the total cohort appeared to have had good skills in phonological awareness since they started off, suggesting that there was not much room for improvement. However, the results of the analysis at the end of the year illustrated that there were some children who regressed or remained in the same

performance group. Thus, the final findings indicated that children's overall performance on PA appeared to be static.

4.5 Discussion

The results of the present study regarding children's phonological awareness during the kindergarten year revealed that some children showed that their phonological skills in terms of identification and blending had been at a good level when they started off, and thus, there was little room for improvement. According to the teachers' reports it appeared that teachers B and C applied tasks that developed children's phonological awareness skills, whilst teacher A did not. In the case of the children in class C, who were found to have an advantage upon their entry, it might have been expected to score at ceiling by the end but they have not. These findings may be because six months of instruction may have not been enough for kindergarteners to show any progress or it may be because the kindergarteners may have needed to receive more systematic instruction on PA in order to develop their skills markedly. Surprisingly, the children's general performance showed that some of them from all three classes regressed at T2, showing that their skills were not secure. Relative to class, the investigation illustrated that class C scored significantly better than class A at the first measurement, but there was no sufficiently specified reason for this. It may have been that their experiences of literacy at home may have initiated the use of phonological awareness skills. Nevertheless, at the end of the year all three classes scored similarly.

Investigating each phonological awareness task individually it was found that the mean differences found between classes relative to PA were specifically localized on the initial phoneme blending task. On this task, children in class A were found to have scored significantly worse than children in classes C and B at T1 and T2 respectively. Nevertheless, on the phoneme blending task children did not seem to differ in their performance at both times. However, investigating the progress made over time it was found that children in class B had a significant fall in their scores at the end of the year.

Manolitsis (2002), in a study investigating Greek kindergarteners' meta-phonological skills suggested that children's phonological skills had reached a good

level, before their entry into kindergarten. Moreover, there were no children who appeared to have no phonological skills. This supports the findings of the present study and enables inferences to be made about the development of children's phonological skills in a transparent language such as Greek, and the effect of children's dealing with literacy activities on their PA skills. Consonant with the present study are the findings from Chaney's (1992) and Seymour and Evans' (1994) studies. However, the results of McClure, Ferreira and Bisanz's (1996) study contradict these findings suggesting that blending phonemes is more difficult for kindergarten children than blending onsets and rimes into CCVC words. Furthermore, Papanis (2001) compared the phonological and syntactic skills of four groups with Greek children, one of which consisted of first graders, at the beginning of the school year when they had not yet received any literacy instruction. Amongst other tasks he assessed children's phoneme blending. The results illustrated that children's performance on phoneme blending was very poor. This finding surprisingly contradicts what emerged from the present study, because in Papanis' study first graders were assessed, who, even though they had not received any literacy instruction, were older than kindergarteners and, therefore, more cognitively advanced.

Nevertheless, in the present study, age and gender did not appear to have any influence on children's performance. Although the younger group seemed to be less cognitively advanced, it was shown that their scores were similar to the older group's scores. Similar were the results relative to gender. These findings contradict Papoulia-Tzelepi's (1997) study, which showed that gender and age had a strong effect on children's performance on PA.

Furthermore, the performance of the PA ability groups illustrated that the majority of children appeared to have good phonological awareness skills in terms of blending at both testing times, even though the assessment of PA was made at phonemic level. Nevertheless, there were children at the end of the year who had regressed or remained in the same ability group. The regression showed that those children's skills were not yet secure. As mentioned above this may be because more systematic instruction on PA was required in order for kindergarteners to show some progress or it may be that six months time of instruction was not enough for young children.

4.5.1 Conclusion

In conclusion, the present study illustrated that most of the children showed generally good performance on the phonological awareness tasks on their entry into kindergarten but it remained static by the end of the year. However, there were some children at the end of the year who remained in the same performance group, or regressed to lower groups, showing that their skills were not yet secure. On the initial phoneme blending task class A appeared to have scored significantly worse than classes C and B at T1 and T2 respectively, whereas on the phoneme blending task the children appeared to score similarly. Gender and age did not seem to have any effect on the children's performance on phonological awareness, despite the younger group being less cognitively advanced than the older group.

CHAPTER 5: Letter Knowledge

Evidence from fundamental research in the English language regarding the role of letter knowledge in early literacy acquisition has been set out in the Literature Review chapter.

5.1 Purpose of the investigation

The present investigation was undertaken to assess Greek kindergarteners' alphabet letter knowledge. The school year started in mid-September. Children were first tested after they had completed three months from their entry to kindergarten (December), and finally at the end of the school year (June). The teachers had not yet started teaching the early literacy syllabus until January. The major purpose of the study was to investigate kindergarteners' knowledge of the Greek alphabet letter-name and letter-sound, determine whether this knowledge changed during their time in kindergarten and whether children's characteristics (such as the school class, the gender, and the age) had any effect on their scores in letter knowledge task at Time 1 and Time 2.

5.2 Materials

An A4 format page with the 24 alphabet letters was used. The alphabet was printed in a large font (24) in both lower and upper case, so that they would be clearer, and spread randomly on the paper (Appendix 9). The print alphabet was adapted from Clay's Observation Survey (1993). Asking children to identify just the letter names and the letter sounds in both lower and upper case seemed to be quite sufficient to show children's level of alphabet knowledge, while the process is not so tiring for them and time-consuming. The same testing material was used at both measurements (Time 1 and Time 2).

5.3 Procedure

Children were video-recorded working individually on the letter identification task. The video camera was used for recording children's responses to the task to ensure

reliability of data collection. The setting was a private room within kindergarten. Each individual was introduced to the procedure and notified about the video recording. The child was asked to identify both the name and the sound of each letter, following the direction of reading (from left to right and from top to bottom). The child was asked to proceed to the next item only if the child had identified the previous one or if the researcher thought that the child could not give a response. Children were prompted to make self-corrections. The same testing print alphabet was given to all children. The focus of the video camera was only on the child. The estimated duration of the tasks was 5-8 minutes, but depending on each case. The same procedure was followed at both measurements (T1 and T2).

Children's responses were coded (Appendix 8), scored and quantitatively analysed. Their scoring was made in two ways, the strict and lax. The strict score concerned solely children's knowledge of letter-names and –sounds, and whether their answers were right or wrong. Each correct answer (either name or sound or both) scored 1 point so that the maximum could be 24 for each child. From the strict score eight variables emerged: letter-name (lower); letter name (upper); letter sound (lower); letter sound (upper); composite score for letter name knowledge; composite score for letter sound knowledge; composite score for lower case letters; and composite score for upper case letters. For the lax score, credit was further given for evidence of general alphabet letter knowledge; specifically, if the child knew neither the name nor the sound of a letter but a word (e.g. /β/-βάρκα; /v/-varka(boat)); a person's name (e.g. K-Κατερίνα; K-Katerina) that started with that grapheme; a syllable that included that sound (e.g. /o/-/κο/, /o/-ko; /λ/-/λε/, /l/ le). Additionally, if s/he could visually identify the letter within a name (φ-Σοφία; /ph/ Sophia), a word (ζ-τραπέζι; /z/-trapezi (table)), a consonant cluster (ρ-στρ-; /r/-/str-/), or even if s/he knew the order of the letter in the alphabet (e.g. α /a/-the first letter of the alphabet), his/her answer was scored with 1 point. Thus, each letter was scored with 1 point whether there was a correct response to either the letter-name, letter-sound or letter general knowledge. The composite scores for lower case and upper case letters emerged by adding up the children's scores in letter-name and letter-sound knowledge in lower case and those in upper case respectively. The composite score for letter name knowledge and letter sound knowledge emerged by adding up the children's

scores in letter names in upper and lower case and in letter sounds in upper and lower case respectively. From the lax score the variable that emerged was general letter knowledge. The lax scoring was based on Clay's (1991) suggestion that letter knowledge may not be strictly the knowledge of letter names and sounds, because children may actually know something about a letter e.g. a word that starts with it, which is considered good evidence of children's letter knowledge.

However, regarding the letter sounds, there were cases where the sound (especially the consonant sounds) was given followed by a vowel making a small CV (consonant-vowel) syllable e.g. β(/v/)→ βε(ve), βι(vi), βο(vo) etc. This was also considered as correct response and was scored 1 point. Young children find vocalising an individual phoneme difficult because it is acoustically evanescent and young children cannot easily keep it in their memory. Uttering a phoneme in a syllable is easier for them to understand.

Nevertheless, even in the case mentioned above there were some exceptions, such as when the CV (consonant-vowel) syllable formed the respective letter-name, because it was not clear if the child confused the name with the sound e.g. M= μι (letter-name-mi) instead of /μ/-m), or if s/he just could not pronounce the sound on its own. Children's letter knowledge scores consisted of children's scores in letter name and letter sound knowledge as occurred from stringent scoring, and of their scores in general letter knowledge as occurred from the lax scoring of children's alphabet knowledge. Letter knowledge was assessed in both upper and lower case letters at each time. Therefore, for either upper or lower case letters there are three sets of data (i.e. letter name knowledge, letter sound knowledge and general letter knowledge (e.g word)). The general letter knowledge is by definition greater than either the letter name or letter sound, because it consists of further information about an alphabet letter than the name or the sound; thus children's scores in this subtest were higher than the rest.

5.4 Results

5.4.1 Letter-name knowledge (upper/lower) at T1 and T2

Table 5.1 shows children's mean scores in the letter name knowledge (upper and lower case) at both T1 and T2 in terms of total cohort and of school class. A mixed between-within ANOVA was conducted to compare children's scores in letter-name in lower case at T1 and T2. The results of the test showed that there was significant effect of time (Wilks' Lambda= .805, $F(1,51)= 12.4$, $p= .001$, partial eta squared= .195). However, neither between groups effect ($F(2,51)= 2.6$, $p= .088$, partial eta squared= .091), nor interaction between time and school class were found (Wilks' Lambda= .944, $F(2,51)= 1.51$, $p= .23$, partial eta squared= .056).

Table 5.1: School class means, standard deviations and range of scores in letter name knowledge (upper/lower) at T1 and T2

	Letter Name Knowledge											
	Time 1						Time 2					
	Lower			Upper			Lower			Upper		
	M	SD	R	M	SD	R	M	SD	R	M	SD	R
TCohort (N=54)	3.04	4.4	21	5.59	6.1	24	5.59	7.5	23	8.48	7.8	24
Class A(N=18)	2.78	3.5	10	5.78	6.5	21	6.28	7.5	22	8.83	7.6	23
Class B(N=16)	4.63	6.3	21	7.63	7.4	24	8.25	8.3	23	12.94	8.2	24
Class C(N=20)	2.00	2.7	8	3.86	4.2	14	2.83	6.1	23	4.60	5.5	18

Analysing further these results an independent samples t-test was performed and indicated that at T2 children in class B scored significantly better than those in class C ($t(26,684)= 2.165$, $p= .04$, partial eta squared= .012). Investigating the improvement made by classes from T1 to T2 relative to letter name knowledge in lower case, the

paired samples t-test found that only classes A and B made significant improvement ($t(17) = -2.61, p = .018$) and ($t(15) = -2.6, p = .022$) respectively (Table 5.1). These findings suggest that all three classes had the same level of knowledge of letter names in lower case at T1. However, by the end of kindergarten year children increased their scores, with children in classes A and B making marked progress. Children in class C did not improve resulting in significantly differing in means from those in class B at T2 (Figures 5.1 and 5.2). Neither gender effect ($F(1,52) = .001, p = .98, \text{partial eta squared} = .013$) (Figures 5.3 and 5.4) nor age effect ($F(1,52) = .014, p = .91, \text{partial eta squared} = .000$) (Figures 5.5 and 5.6) were found at both testing times.

In upper case letters (Table 5.1) the test results showed that there was significant time effect on children's letter-name knowledge (Wilks' Lambda = .745, $F(1,51) = 17.48, p = .000, \text{partial eta squared} = .26$). Likewise, there was significant between groups effect ($F(2,51) = 4.47, p = .016, \text{partial eta squared} = .15$) and significant interaction between the two factors (Wilks' Lambda = .889, $F(2,51) = 3.18, p = .05, \text{partial eta squared} = .11$). The interaction between time and school class is verified by the results of the one-way ANOVA which indicated that, although there was no class effect at T1 on children's performance, there was significant group effect at T2 $F(2,51) = 6.08, p = .004$.

Figure 5.1: School class mean scores on letter-name and -sound knowledge (U/L) at T1

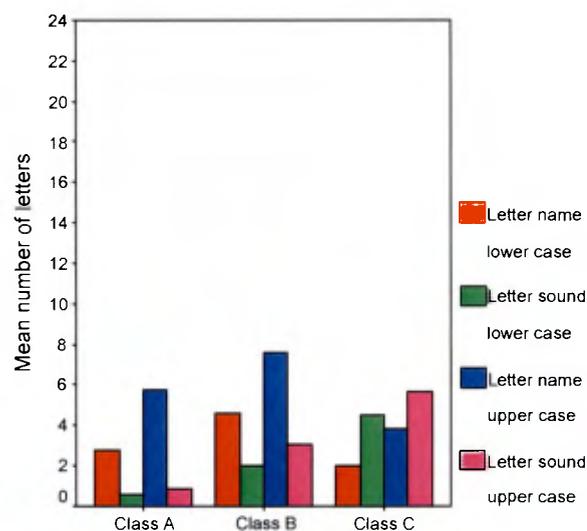
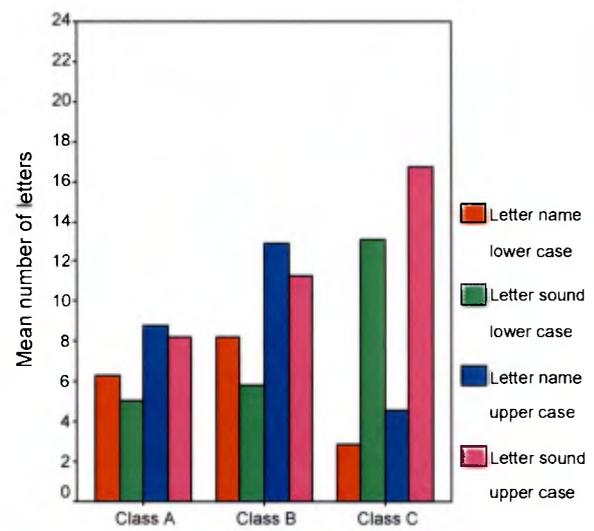


Figure 5.2: School class mean scores on letter-name and -sound knowledge (U/L) at T2



Post-hoc comparisons using the Tukey HSD test showed that at T2 class B was significantly different from class C ($p = .003$) (Table 5.1). The paired samples t-test, investigating the improvement made by classes from T1 to T2, revealed that only class A ($t(17) = -2.65, p = .017$) and class B ($t(15) = -3.312, p = .005$) improved significantly. The findings suggest that all three classes started off having the same level of knowledge of letter names in upper case (Figure 5.1).

Figure 5.3: Means by boys and girls on letter-name and -sound knowledge (U/L) at T1

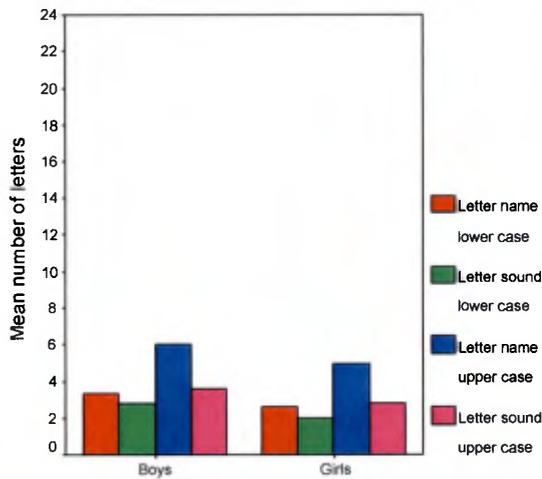


Figure 5.4: Means by boys and girls on letter-name and -sound knowledge (U/L) at T2

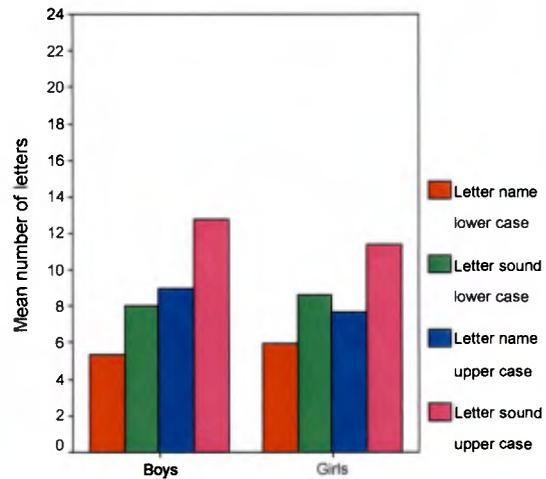


Figure 5.5: Mean scores on letter-name and -sound knowledge (U/L) relative to younger and older children at T1

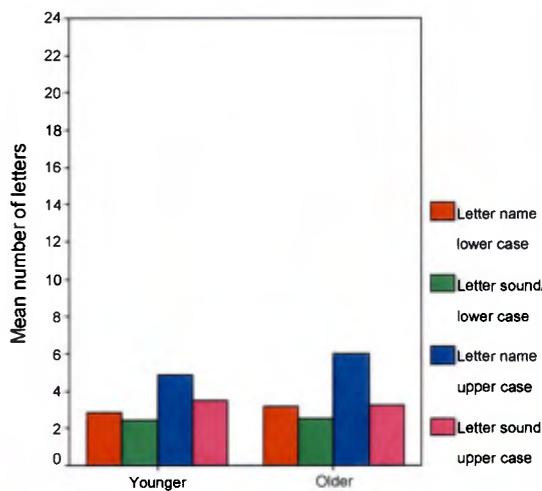
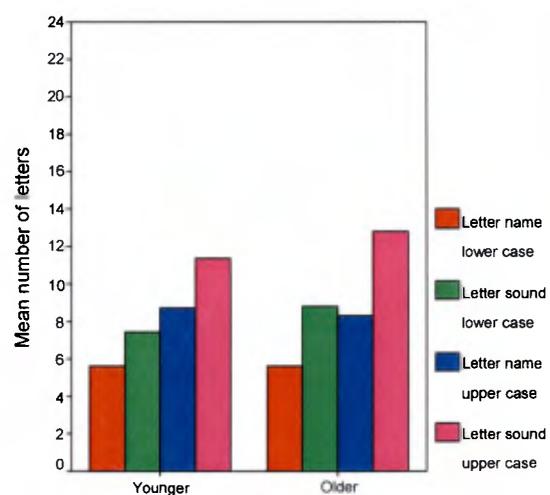


Figure 5.6: Mean scores on letter-name and -sound knowledge (U/L) relative to younger and older children at T2



Nevertheless, at the end of the year classes A and B made marked improvement, resulting in children in class B scoring better than children in class C (Figure 5.2). This finding may indicate an instructional effect on children’s performance. Further, there was neither gender effect ($F(1,52)= .43, p= .51, \text{partial eta squared}= .008$) (Figures 5.3 and 5.4) nor age effect ($F(1,52)= .042, p= .83, \text{partial eta squared}= .001$) (Figures 5.5 and 5.6) at both testing times.

5.4.2 Letter-sound knowledge (upper/ lower) at T1 and T2

Investigating children’s knowledge of letter sounds in lower case (Table 5.2), the mixed between-within ANOVA test was performed, which showed that there was significant time effect on their performance (Wilks’ Lambda= .578, $F(1,51)= 37.23, p= .000, \text{partial eta squared}= .42$) and significant between groups effect ($F(2,51)= 6.92, p= .002, \text{partial eta squared}= .21$). However, no significant interaction was found between time and class (Wilks’ Lambda= .906, $F(2,51)= 2.63, p= .082, \text{partial eta squared}= .094$). These show that children increased their knowledge of the sounds at T2. Nevertheless, differences in means were found between classes regarding their performance.

Table 5.2: School class means, standard deviations and range of scores in letter sound knowledge (upper/ lower) at T1 and T2

	Letter Sound Knowledge											
	Time 1						Time 2					
	Lower			Upper			Lower			Upper		
	M	SD	R	M	SD	R	M	SD	R	M	SD	R
TCohort (N=54)	2.46	4.3	21	3.31	5.0	23	8.28	8.6	24	12.26	8.6	24
Class A(N=18)	.56	.78	3	.89	1.4	4	5.06	7.0	23	8.22	7.5	24
Class B(N=16)	2.0	4.0	14	3.06	4.8	15	5.88	6.7	17	11.25	9.3	24
Class C(N=20)	4.55	5.4	21	5.7	6.2	23	13.1	9.4	24	16.7	7.2	23

In order to localise the differences between the groups, the one-way ANOVA was performed at both testing times. The test illustrated that there was significant difference in means between groups both at T1 ($F(2,51)= 4.9, p= .011$) and at T2 ($F(2,51)= 5.88, p= .005$). Post-hoc comparisons at T1 using the Tukey HSD test indicated that the mean score for class A was significantly different from the mean score for class C ($p= .009$). At T2, the post-hoc comparisons similarly indicated that there was a significant difference in means between class C and both classes A ($p= .008$) and B ($p= .025$). Exploring the improvement made by the classes from T1 to T2, the paired samples t-test showed that all three made significant progress (class A: $t(17)= -2.78, p= .013$; class B: $t(15)= -2.35, p= .033$; class C: $t(19)= -5.59, p= .000$). The analysis further indicated that there was neither gender effect ($F(1,52)= .014, p= .95, \text{partial eta squared}= .000$) (Figures 5.3 and 5.4) nor age effect ($F(1,52)= .18, p= .67, \text{partial eta squared}= .003$) (Figures 5.5 and 5.6) on children's scores at both testing times.

These findings suggest that class C had better knowledge of the letter sounds in lower case than class A upon entry to kindergarten (Figure 5.1). However, although it would have been expected from class A to minimise the difference, class C maintained this advantage by showing more improvement than the others and scored significantly better than both classes A and B (Figure 5.2). The instruction children received in kindergarten may have capitalised on their prior knowledge resulting in the increase in the letter sound knowledge. Gender and age appeared to have no effect on children's scores on letter-sound knowledge (lowercase).

The mixed between-within ANOVA test was performed to investigate letter-sound knowledge in uppercase. The test found that there was significant effect of time (Wilks' Lambda= .372, $F(1,51)= 86.122, p= .000, \text{partial eta squared}= .628$) and significant between groups effect ($F(2,51)= 6.923, p= .002, \text{partial eta squared}= .214$). However, no interaction was found between time and class (Wilks' Lambda= .946, $F(2,51)= 1.444, p= .254, \text{partial eta squared}= .054$). The one-way ANOVA showed that there was significant difference between groups both at T1 ($F(2,51)= 5.094, p= .010$) and at T2 ($F(2,51)= 5.47, p= .007$). Post-hoc comparisons illustrated that class C significantly differed from class A both at T1 ($p= .007$) and at T2 ($p= .006$) (Table 5.2). The paired samples t-test, performed to explore the improvement made by classes from T1 to T2,

showed that all three made marked progress (class A: $t(17) = -4.175$, $p = .001$; class B: $t(15) = -4.546$, $p = .000$; class C: $t(19) = -7.799$, $p = .000$). Neither gender effect ($F(1,52) = .431$, $p = .514$, partial eta squared = .008) (Figures 5.3 and 5.4) nor age effect ($F(1,52) = .108$, $p = .743$, partial eta squared = .002) (Figures 5.5 and 5.6) were found at both testing times.

These findings suggest that class C had an advantage regarding their knowledge of letter sounds in upper case from the beginning of the year, specifically compared to class A, and this advantage was maintained by the end of the year. Although all three classes significantly improved from T1, class C showed greater improvement in comparison to the others (Figure 5.1. and 5.2). Gender and age had no effect on children’s performance. Analysing further all three classes’ letter-sound knowledge at T2 it was found that the majority of class A scored less than 50% in the alphabet sounds both in lower case ($n=15$) and in upper case ($n=11$). The number of children in class B who scored less than 50 % was 12 (lower case) and 8 (upper case), and in class C was 8 (lower case) and 5 (upper case). These findings show that children of class A will be at a disadvantage compared to the other two classes, when they start formal literacy education.

5.4.3 Letter-name and -sound knowledge composite scores at T1 and T2

Table 5.3: School class means and standard deviations for children’s composite scores in letter-name and –sound knowledge at T1 and T2

	Composite scores in letter name and letter sound knowledge							
	Time 1				Time 2			
	Names		Sounds		Names		Sounds	
	M	SD	M	SD	M	SD	M	SD
TCohort (N=54)	8.62	10.3	4.92	8.5	14.07	14.8	20.53	16.7
Class A(N=18)	8.55	10.0	1.11	1.5	15.11	16.9	13.27	13.8
Class B(N=16)	12.50	13.4	4.00	8.0	21.18	15.9	17.12	15.7
Class C(N=20)	5.8	6.6	9.1	10.8	7.45	11.0	29.80	16.3

In terms of investigating children's knowledge of the alphabet letters it was decided to compare children's knowledge of the letter names and letter sounds regardless of the letter case both at T1 and at T2 (Table 5.3). The paired samples t-test was performed to investigate whether there was any difference between children's knowledge of the names and of the sounds at T1 in terms of the total cohort and it was shown that there was a significant difference between them ($t(53) = 2.053$, $p = .045$), with children having better knowledge of the letter names. The analysis relative to class further indicated that children in classes A ($t(17) = 3.049$, $p = .007$) and B ($t(15) = 2.24$, $p = .041$) appeared to have better knowledge of the names than of the sounds upon entry, whereas children in class C had similar knowledge of both. Similarly to T1 a significant difference was found in terms of total cohort between letter name and letter sound knowledge at T2, $t(53) = -2.442$, $p = .018$. Nevertheless, the difference between them at the end of the year was due to the children's better knowledge of the sounds than of the names (Table 5.3).

Relative to class the results indicated that the children in class C appeared to know the letter sounds better ($t(19) = -5.712$, $p = .000$), whereas the children in classes A and B had similar knowledge of both. The overall findings suggest that the children started off having better knowledge of the names. However, this difference occurred because children in classes A and B appeared to score better on letter name knowledge. In contrast children in class C had similar knowledge of names and sounds. Nevertheless, by the end the children appeared to have better knowledge of the sounds. Further analyses indicated that there was a great increase in children in class C's letter sound knowledge, which resulted in increasing the score of the total cohort. In contrast, children in classes A and B did not show any differences in their knowledge between the letter-names and -sounds. In the case of class C the increase might be due to the instruction the children received during their time in kindergarten.

According to the teachers' reports, though all of them taught children the letter sounds and applied tasks that could develop children's knowledge of the sounds, only teacher C reported that she focused primarily on teaching them the sounds from the beginning of the year. Thus, the children's good knowledge of the sounds may be due to the instruction or generally to children's experiences of literacy during their time in kindergarten.

5.4.4 Lower and upper case letter knowledge composite scores at T1 and T2

Table 5.4: School class means and standard deviations for children's composite scores in lower and upper case letters at T1 and T2

	Composite scores in lower and upper case letters							
	Time 1				Time 2			
	Lower		Upper		Lower		Upper	
	M	SD	M	SD	M	SD	M	SD
TCohort (N=54)	5.5	6.3	8.9	7.6	13.8	12.9	20.7	12.9
Class A(N=18)	3.3	3.4	6.6	6.6	11.3	14.1	17.0	14.6
Class B(N=16)	6.6	8.1	10.6	9.1	14.1	12.2	24.1	14.2
Class C(N=20)	6.5	6.5	9.5	7.1	15.9	12.5	21.3	9.7

Continuing to investigate children's letter knowledge it was decided to explore generally their knowledge of the upper and lower case letters. Table 5.4 presents children's composite scores in lower and upper case letters at T1 and T2. These data resulted from adding up children's scores on letter name and letter sound in lower case, and their scores on letter name and letter sound in upper case. The paired samples t-test was conducted to compare children's performance on lower and upper case letter knowledge at T1. It showed that there was a significant difference between them ($t(53) = -6.944$, $p = .000$) with children knowing the capital letters better than the small. In terms of class all three of them had better knowledge of the upper case letters (A: $t(17) = -3.589$, $p = .002$; B: $t(15) = -3.535$, $p = .003$; C: $t(19) = -5.84$, $p = .000$). At T2 the results were similar to T1. Children's uppercase letter knowledge was better than lowercase ($t(53) = -7.242$, $p = .000$). Exploring their performance in terms of class the results showed that children in all three classes knew upper case letters better than the lower case (A: $t(17) = -3.391$, $p = .003$; B: $t(15) = -5.629$, $p = .000$; C: $t(19) = -3.929$, $p = .001$). In order to explore whether there were any differences between classes in lowercase at T1 and T2 and in uppercase at T1 and T2, the ANOVA test was performed and it showed that there was no difference between classes either in lowercase at T1 ($F(2,51) = 1.599$, $p = .21$) and T2

($F(2,51) = .60, p = .55$) or in uppercase at T1 ($F(2,51) = 1.270, p = .29$) and T2 ($F(2,51) = 1.327, p = .27$).

These results show that children had better knowledge of the upper case than the lower case both at T1 and T2. The analysis did not find any differences between upper and lower case relative to class both at T1 and T2 and no class differences in knowledge of lowercase and of uppercase at both testing times. Thus, it is suggested that children were more familiar with capital letters upon their entry and this might have been due to their literacy experiences and to their exposure to print. Young children are exposed to environmental print (e.g. signs, logos, labels) which is predominantly in uppercase, therefore, they appear to know them better. According to teachers' reports, they all started teaching the upper case letters because these are easier in writing and more frequent in environmental print than lower case. Thus, the existing knowledge of the uppercase was further developed by the end of the year. Regarding the lowercase only teacher C in her report said that at the end she focused on teaching children the lower case letters. However, the analysis showed that there was no difference between classes relative to their knowledge of the lowercase and uppercase at both times.

5.4.5 General letter knowledge (upper/ lower) at T1 and T2

Table 5.5: School class means and standard deviations for general letter knowledge (upper/ lower) at T1 and T2

	General Letter Knowledge							
	Time 1				Time 2			
	Lower		Upper		Lower		Upper	
	M	SD	M	SD	M	SD	M	SD
TCohort (N=54)	5.57	6.25	9.15	7.6	10.87	8.88	15.22	7.92
Class A(N=18)	3.39	3.53	7.22	7.13	7.5	7.88	11.17	8.21
Class B(N=16)	6.5	7.93	10.5	9.01	11.13	9.11	16.63	8.09
Class C(N=20)	6.8	6.41	9.80	6.77	13.76	8.91	17.75	6.26

Table 5.5 presents children's general letter knowledge in lower and upper case at T1 and T2. These data resulted from the lax scoring of children's letter knowledge. The

mixed between-within ANOVA test showed that there was a significant time effect on children's general letter knowledge regarding lower case letters (Wilks' Lambda= .568, $F(1,51)= 38.86$, $p= .000$, partial eta squared= .432). However, there was neither between class effect ($F(2,51)= 2.412$, $p= .10$) nor interaction between time and class (Wilks' Lambda= .958, $F(2,51)= 1.121$, $p= .334$). More detailed analysis of the data was made and the independent samples t-test was performed. The test showed that there was a significant difference in means between children in class A and those in class C at T1 ($t(30.149)= -2.057$, $p= .048$) and at T2 ($t(36)= -2.261$, $p= .030$). Regarding the improvement made by each class, the paired samples t-test showed that all three had marked progress from T1 to T2 (class A: $t(17)= -2.884$, $p= .010$; class B: $t(15)= -3.161$, $p= .006$; class C: $t(19)= -4.835$, $p= .000$). These findings suggest that children improved a lot from the beginning of the year to the end, showing that what they generally know about letters had increased, which, in turn, means that their experiences of print developed after six months. Further the analysis indicated that children in class C had better general knowledge of the letters when these were presented in lowercase than children in class A upon their entry into kindergarten. Though the three classes increased their general letter knowledge by the end, children in class C maintained the advantage over children in class A.

The same test was performed to compare children's scores on general letter knowledge in upper case at T1 and T2 and found that there was a significant effect of time (Wilks' Lambda= .457, $F(1,51)= 60.54$, $p= .000$, partial eta squared= .543). It further emerged from the analysis that there was neither between class effect ($F(2,51)= 2.461$, $p= .095$) nor interaction between time and class (Wilks' Lambda= .915, $F(2,51)= .103$, $p= .085$). The one way ANOVA, performed to explore the differences between classes found that, though there was no significant difference between classes at T1 ($F(2,51)= .902$, $p= .41$), there was a significant difference between them ($F(2,51)= 4.043$, $p= .023$) at T2. Specifically, children in class C significantly differed in their general letter knowledge in uppercase from those in class A ($p= .025$). Investigating the improvement made by each class, it was indicated that all three classes made marked progress (class A: $t(17)= -2.858$, $p= .011$; class B: $t(15)= -4.464$, $p= .000$; class C: $t(19)= -6.408$, $p= .000$) (Table 5.5). The analysis generally illustrated that, although all three

classes started off having similar general knowledge regarding alphabet letters, when these were presented in uppercase, it was found that by the end the children in class C appeared to know more about the alphabet letters than those in class A. The reason might be the children's dealings with print in uppercase during their time in kindergarten or generally their exposure to print as mentioned above in the analysis of their uppercase letter knowledge.

5.4.6 Identification of the initial grapheme at T1 and T2

Extending the investigation of children's letter knowledge, a task similar to letter knowledge in Clay's CAP test was used. Children's skills in isolating the initial grapheme of a set of words and in identifying any differences between them were assessed. The child was given an A4 format paper on which three sets of three nouns were written and asked to identify the initial grapheme of all three words of each set, as well as finding which one was different from the other two. Before the testing items, a practice set of words was given to them in order to understand what the task was asking. Sometimes the child could not understand the requirements of the task or the concept of 'different'. In this case, the researcher changed the articulation of the task and asked the child to find the initial graphemes, identifying which were the same and then the grapheme that was different from the other two. The child was asked to proceed to the next item only if s/he had identified the different word or if the researcher thought that the child could not find it. Children were prompted to make self-corrections. The same testing items were given to all children.

Table 5.6: School class means and standard deviations on identification of the initial grapheme at T1 and T2

Identification of the initial grapheme	Time 1			Time 2		
	N	M	SD	N	M	SD
Total Cohort	54	2.24	.78	54	2.61	.79
Class A	18	2.00	.91	18	2.50	.86
Class B	16	2.31	.70	16	2.63	.81
Class C	20	2.40	.68	20	2.70	.73

Table 5.6 shows children’s performance on identifying the initial grapheme at both T1 and T2, presenting the scores of total cohort and of each class. The analysis showed that there was a significant time effect (Wilks’ Lambda= .88, $F(1,51)= 7.2$, $p= .01$, partial eta squared= .12) on children’s scores. However, neither class effect ($F(2,51)= 1.25$, $p= .29$) nor interaction between the factors (Wilks’ Lambda= .99, $F(2,51)= .22$, $p= .8$) were found. The findings suggest that children’s overall performance on identifying differences between words relative to their initial graphemes when they started off was good. This means that there was not much room for improvement. Exploring this further, it was illustrated that there was no sign of improvement by any of the three classes (A: $t(17)= -1.844$, $p= .08$; B: $t(15)= -1.159$, $p= .26$; C: $t(19)= -1.674$, $p= .11$). Hence, children’s performance was static. In terms of class the analysis showed that there were no mean differences between classes at both testing times. Additionally, it emerged that there was neither a gender effect ($F(1,52)= .44$, $p= .51$) (Figure 5.7) nor an age effect ($F(1,52)= .372$, $p= .059$) on children’s scores at T1 and T2 (Figure 5.8).

Figure 5.7: Mean scores by gender on identification of initial grapheme at T1 and T2

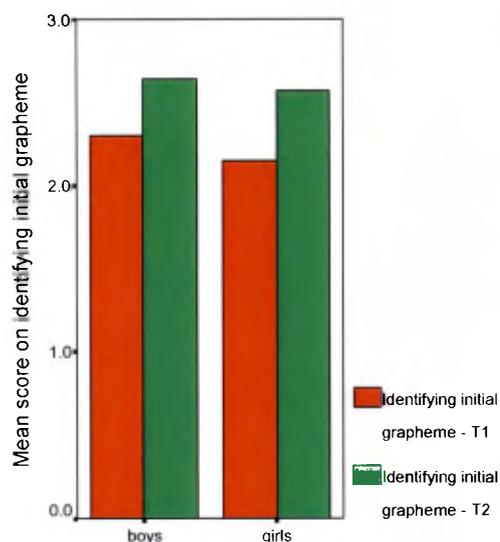
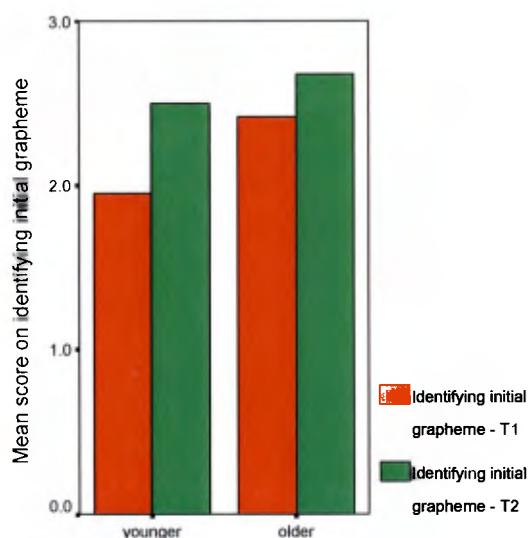


Figure 5.8: Mean scores by age on identification of initial grapheme at T1 and T2



5.5 Discussion

The analysis of children's letter knowledge was broken down into eight parts; namely the letter-name knowledge (in lower and upper case), the letter-sound knowledge (in lower and upper case), the letter name knowledge composite score, the letter sound knowledge composite score, the lowercase letter knowledge composite score, the uppercase letter knowledge composite score, the general letter knowledge and the initial letter knowledge.

Investigation of the data on letter-names in lower case indicated that all three classes started off having similar levels of knowledge. Nevertheless, by the end of the year, children increased their scores with those in classes A and B making marked progress. Those in class C did not improve and this resulted in significantly differing means than children in class B at the end of the year. In upper case, the results were similar to those in lower case, with class B scoring better than class C.

Analysing children's performance on the letter sounds in lowercase it was illustrated that class C seemed to have better knowledge of the sounds than class A upon entry into kindergarten. This advantage of the children in class C implies that children had prior knowledge regarding the sounds, which, in turn, may suggest that children's experiences of literacy before kindergarten play a significant role in their literacy learning. Though by the end, all three classes improved, class C maintained the advantage over class A and did also better than class B. This shows that the instruction that children in class C received capitalised on their prior knowledge and resulted in their doing better than both classes A and B at the end. With regard to the instruction that classes A and B received, it may be indicated that it did not help them to catch up with the children in class C.

In uppercase the results were similar to lowercase. Children in class C did better than those in class A at both testing times. However, in the case of class B no differences were found from class C. Overall these suggest that the advantage of class C relative to letter sounds was evident in both lower and upper case letters. The scores of class A regarding the sounds in both letter cases may suggest that these children would be at a disadvantage when they will start receiving formal literacy teaching. In the case of children in class B they appeared to be doing better in letter sounds when presented in

uppercase. According to teachers' reports teachers A and B included in their programmes the teaching of the sounds. However, the children in class A's performance showed that they had little knowledge of the sounds at both times indicating that the instruction received may not have been effective. In the case of class B the analysis illustrated that, in contrast to lowercase, in uppercase letters children's performance was similar to that of class C, which may suggest that teacher B worked more on letter sounds presented in uppercase during her literacy programme. Children in class C's performance justifies teacher C's report on her teaching plan regarding the letter sounds.

In terms of investigating children's letter name and letter sound knowledge composite scores comparisons were made between these two bits of letter knowledge. It was found that overall, when children started off, they had better knowledge of the letter names than of the sounds. Relative to class, children in class C appeared to have similar knowledge of the names and sounds upon entry, whereas classes A and B had better knowledge of the names. This contradicts the findings by Tafa (2003), who suggested that children's letter sound knowledge on their entry to kindergarten is better than letter name knowledge. Nevertheless, by the end there was an increase in children's letter sound knowledge and they were found to have better knowledge of the sounds than of the names. Though children in classes A and B had similar knowledge of the names and the sounds, children in class C appeared to be doing better in letter sound knowledge. The overall progress made was generally related to the performance of class C at the end of kindergarten year. According to the teachers' reports, teachers A and B said that they taught children both the names and the sounds. Nevertheless, teacher C reported that she focused primarily on the sounds. These reports justify what emerged from the analysis.

Children overall were also found to have scored higher in their knowledge of the uppercase letters than of the lowercase letters. This supports the findings by Tafa (2003) which showed that children's knowledge of the uppercase letters was better than that of the lowercase. There it may be that the environmental print predominantly consists of capital letters (e.g. signs, logos, labels, etc.), therefore young children become more familiar with uppercase letters than with lowercase, which are more likely to be seen in written texts. This is consonant with what Meek (1993) has suggested, that kindergarteners identify the upper case letters more easily, because through the

environmental print, children come across the capital letters more often (Tafa, 2001). The other reason may be the teaching instruction received regarding the alphabet letters. As mentioned above teacher C focused basically on the sounds resulting in children's good performance at the end of the year. Additionally, children appeared to know the uppercase letters better than the lowercase letters. According to what the teachers reported all of them placed emphasis on the uppercase than on the lower. Only teacher C said that she started teaching them the lowercase at the end of the year. Generally, exploring children's mean scores in the alphabet letters, regardless of letter case or of name and sound, it is suggested that at the end of the year children had not still learnt all the alphabet letters. Manolitsis (2000), in his longitudinal study, illustrated that Greek kindergarteners had generally poor letter knowledge with nearly half of them scoring zero. The findings of the present study contradict the study by Manolitsis (2000) because it was found that nearly all of the children knew some of the letters.

The books (edited Curto, Morillo and Teixido, 1998) distributed to kindergarten teachers by the Pedagogic Institute suggested that kindergarten teachers should work on upper case letters at the beginning of their early literacy teaching, until children have learnt nearly all the alphabet letters and begin to have some dexterity in writing. Some of the reasons indicated were that capital letters are easier to distinguish as distinct units; children spend a lot of time counting how many letters a name has or should have, or if it has more or fewer than others, and upper case letters makes this task easier. Moreover, Curto et al. (1998) claimed that capital letters in the Greek language are easier for young children to write because of their straight lines. According to Adams (1990) the essential first step in reading is to ensure that children are very familiar with the shape and the names of letters, and whether they begin with upper and lower case letters is of no importance.

Regarding children's general letter knowledge it was found that children's score was higher than those in letter names and letter sounds. This indicates that even though the children did not know the names and the sounds of the letters, they did know something about them. Upon entry this knowledge is not sufficiently specified. However, it may be due to children's experiences of dealing with literacy at home. By the end of

the year this knowledge increased, but still was not as clearly specified, as would be warranted after a year of instruction. However, it may be suggested that children's involvement in literacy at home and in the kindergarten may have facilitated the increase in their general knowledge of the letters. The children in class C were found to have more general knowledge of the letters than those in class A. Specifically, regarding the lowercase, children in C appeared to be better than class A from the beginning of the year until the end. In the case of uppercase letters, though all three classes had similar knowledge from the beginning, by the end, class C was found to be better than class A. The differences between the classes relative to general letter knowledge suggest that children's literacy experiences at home and in kindergarten and the instruction received may have had a great effect on their performance.

Related to the above, it is suggested that print exposure is the first link to literacy. Children's general letter knowledge is indicative of their literacy experiences, which, in turn, are related to children's literacy acquisition. Mason (1980) has suggested that children who have not yet acquired letter knowledge and phonemic awareness may appear to read signs in their environment. However, as Ehri (1991, p.61) points out, reading is not of the print *per se*, but of the environmental cues. In several studies high correlations were found between print exposure and word recognition, spelling and orthographic tasks, and very strong correlations with vocabulary and other verbal abilities (Cunningham and Stanovich, 1990, 1991; Stanovich, 1993; Stanovich and Cunningham, 1992; Echols et al, 1996). Stanovich and West (1989) have shown that the more a child is exposed to print and engages effectively with texts, the more his/her skills will become fluent and automatic.

The exploration of children's skills in isolating the initial grapheme of a set of words and identifying the differences between them indicated that the children had good performance upon their entry with not much room for improvement. Though it would have been expected to reach ceiling at the end, the analysis showed that the children's performance was static. No differences between classes, neither gender nor age effects were found at both times.

From the present analysis, however, it emerged that gender and age did not seem to have any effect on their scores regarding their letter knowledge. Though the younger

children were considered as less cognitively advanced, they did not seem to differ from the older kindergarteners in relation to letter knowledge. This is evidence of school effect, which suggests that the children were able to benefit from instruction regardless of age.

5.5.1 Conclusion

The results of this study showed that children had better knowledge of the letter names than of the sounds when they started off. However, by the end children were found to have better knowledge of the sounds than of the names. In terms of the letter case, the analysis showed that children knew the uppercase letters better than the lowercase at both testing times. Breaking down the data on children's letter knowledge it was indicated that though all classes started off having the same level of knowledge relative to letter names both in lowercase and in uppercase, by the end, class B was found to be better than class C. This may be evidence of instructional effect and of the effect of children's literacy experiences. Regarding the sounds, class C appeared to have significantly better knowledge than class A upon entry into kindergarten both in lowercase and in uppercase. At the end of the year, though all three classes made marked progress, class C maintained this advantage over class A. However, the analysis further showed that in the case of letter sounds in lowercase, class C also did better than class B. Relative to the performance of class C, it is indicated that the instruction children received capitalised on their prior knowledge and increased it. However, regarding the performance of children in class A, it could be suggested that their knowledge of the sounds was much less than 50% both in lower and upper case both at T1 and T2. This means that those children, when they begin to receive formal literacy education in the first grade they will be at a disadvantage compared with the children in classes B and C.

Children further appeared to have a lot of general knowledge of alphabet letters, suggesting that although some children were not aware of the names and the sounds, strictly speaking, they knew something about the letters such as words that start with each sound. In terms of class, though in uppercase all three classes had similar general letter knowledge upon entry, class C was found to be better than class A at the end. In lowercase, class C did better than class A at both times. Moreover, exploring children's

skills in identifying the initial grapheme it emerged that upon their entry into kindergarten children's performance was good with not much room for improvement. However, by the end, their performance was static. In terms of class no differences were found.

Generally gender and age did not seem to have any effect on any measure of children's letter knowledge at both testing times. The fact that age did not seem to be an issue supports the existence of an educational effect, and further shows that younger kindergarteners can benefit from instruction.

CHAPTER 6: Concepts About Print (CAP)

The role of the Concepts About Print in the young children's literacy acquisition has been indicated in the Literature Review chapter.

6.1 Purpose of the investigation

The present investigation was undertaken to assess Greek kindergarteners' concepts about print. The school year started in mid-September. Children were tested during their first term and finally at the end of the school year (June). The teachers had not started teaching the early literacy syllabus until January. The major purpose of the investigation was to investigate kindergarteners' book knowledge and book manipulation by testing their book handling skills, their awareness of how books work, and of the directionality of print, as well as exploring their knowledge of concepts about print at the beginning of the year, determining whether this knowledge changed during their time in kindergarten, and whether the age, the gender, and the school class had any effect on it by the end of the school year.

6.2 Materials

The concepts under testing were the following: **a) the beginning of the story, b) the end of the story, c) from the left to the right, d) from the top to the bottom, e) from the left page to the right page and f) line sequence.** These concepts concern specifically the directionality of print and the book handling, which are considered part of the basic conventions that Greek children should learn during their time in kindergarten, according to the new curriculum. The same material was used at both measurements (T1 and T2).

6.3 Procedure

Children were video-recorded working individually on the task regarding concepts about print (CAP). The video was used only to record children's responses to the tasks. The setting was a private room within the kindergarten. Each child was

introduced to the procedure and notified about the video recording. Instead of reading the fairytale to the child and asking him/her to show the researcher the testing concepts, s/he was given the fairytale and asked to start reading. Many children said that they did not know how to read the words. Then they were asked to pretend that they know and show what they think people do when they read. When s/he began doing this, the researcher started asking him/her to show the concepts. For example, the questions were: *“Show me with your finger where does the story begin”* or *“show me with your finger which direction we follow when we read”* or *“when we finish reading the page, what do we do”*. Sometimes, though, the researcher had to rephrase the questions, e.g. in the first concept the question was *“from where should we start reading in order to find out what does this story say?”* or regarding the last concept, *“what do we do when we finish reading the first line? Where do we go next in order to continue reading?”* When the researcher thought that the child could not complete the task, or had any difficulty in any of the items, they proceeded to the next item or ended the task. Children were also prompted to make self-corrections. The sequence of the items was the same for all children. The video camera was focused only on the child. The estimated duration of the task was five minutes but depending on each case. The same procedure was followed at both measurements (T1 and T2). The credit for each correct response was 1 point. The scoring of children’s performance on the CAP task was made by counting each child’s overall score on the CAP items. A further analysis was then made in order to investigate children’s performance on each item.

6.4 Results

In the exploratory analysis, it was found that the distribution of scores was not normal but rather negatively skewed (Figures 6.1 and 6.2).

Figure 6.1: Distribution of scores in CAP at T1

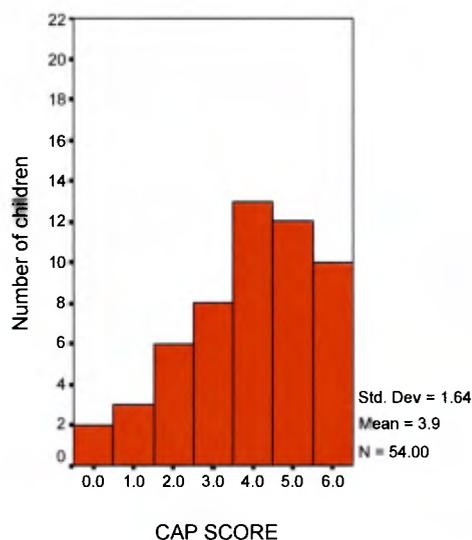
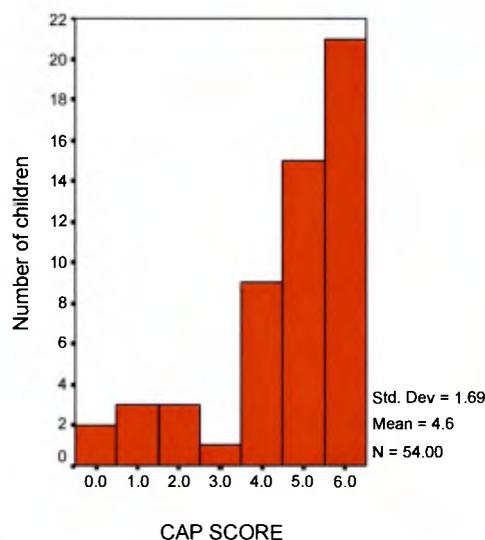


Figure 6.2: Distribution of scores in CAP at T2



The histogram representing the distribution of children's scores in CAP at T2 (Figure 6.2.) shows that at the end of the kindergarten year, just under half of the sample reached ceiling, whereas at T1 (Figure 6.1), far fewer children had ceiling scores.

6.4.1 Concepts About Print

Table 6.1. Means, standard deviations and range of CAP at T1 and T2 relative to school class

CAP	Time 1				Time 2		
	N	M	SD	Range	M	SD	Range
Total Cohort	54	3.91	1.64	6	4.61	1.69	6
Class A	18	3.72	1.71	6	3.78	1.86	6
Class B	16	4.19	1.47	6	4.50	1.75	6
Class C	20	3.85	1.76	6	5.45	1.00	6

Table 6.1 shows children's mean scores in concepts about print at T1 and T2 in terms of total cohort and of each class. A mixed between-within ANOVA was conducted to compare children's scores in concepts about print at T1 and T2. The results of the test showed that there was significant effect of time, Wilks' Lambda= .87, $F(1,51)= 7.67$, $p=.008$, partial eta squared= .13, on children's performance on CAP at T2, resulting in having higher scores than at T1. It was further found that although there was no between classes effect ($F(2,51)= 2.125$, $p= .13$, partial eta squared= .077), there was a significant interaction between time and class ($F(2,51)= 4.34$, $p= .018$, partial eta squared= .145). This means that at T2, classes seemed to differ in their scores in contrast to T1 (Table 6.1).

The one-way ANOVA found there was statistically significant difference in CAP scores for the three classes at T2 ($F(2,51)= 5.503$, $p= .007$, partial eta squared= .18). and indicated that class C significantly differed from class A ($p= .005$). The findings from the paired samples t- test showed that class C made statistically significant progress from T1 to T2, $t(19)= -4.414$, $p= .001$, whereas classes A and B did not. This is also evident in the bar chart presenting children's mean scores relative to class (Figure 6.3). Exploring Fig. 6.3, it is indicated that although it appeared initially that there was a robust effect of time on CAP performance, the more detailed analyses localised this to a significant improvement being made only by class C. This is shown further in Figures 6.4a. and 6.4b, which indicate that even when examining concepts about print separately, the overall progress made was generally related to the performance of class C at the end of the kindergarten year.

Figure 6.3: School class mean scores on CAP at T1 and T2

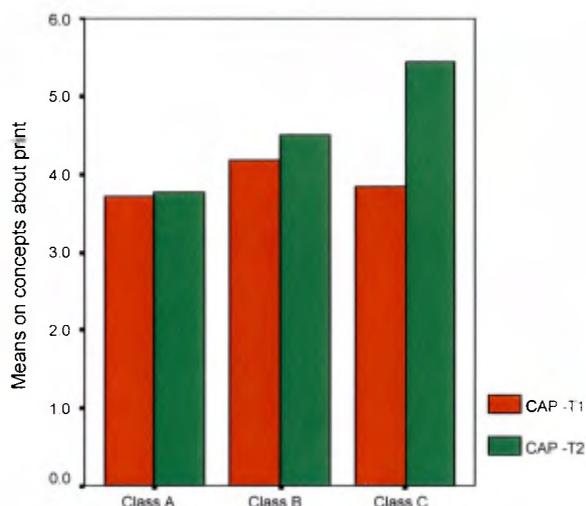


Figure 6.4a: Distribution of the percentage of children in each class achieving CAP scores 0-6 at T1

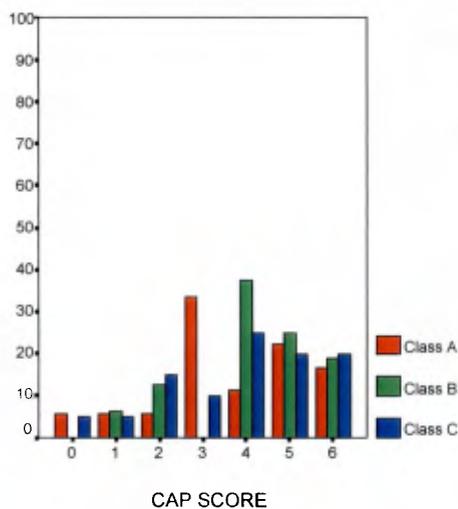
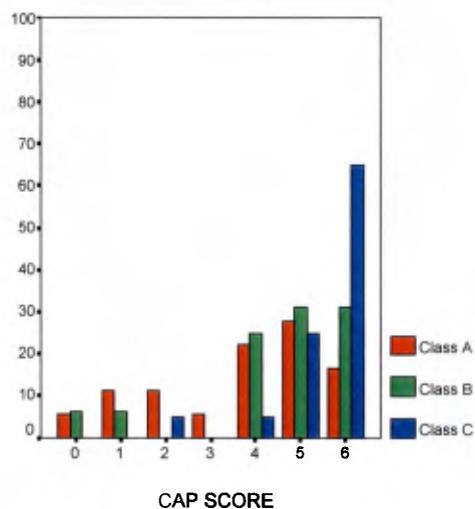


Figure 6.4b: Distribution of the percentage of children in each class achieving CAP scores 0-6 at T2



As with the other analyses there was neither gender effect (T1: $t(52) = .347, p = .32$; T2: $t(33.813) = 1.221, p = .23$) (Figure 6.5), nor age effect (T1: $t(52) = -1.967, p = .055$; T2: $t(28.787) = -1.246, p = .223$) (Figure 6.6).

Figure 6.5: Mean scores by gender on CAP at T1 and T2

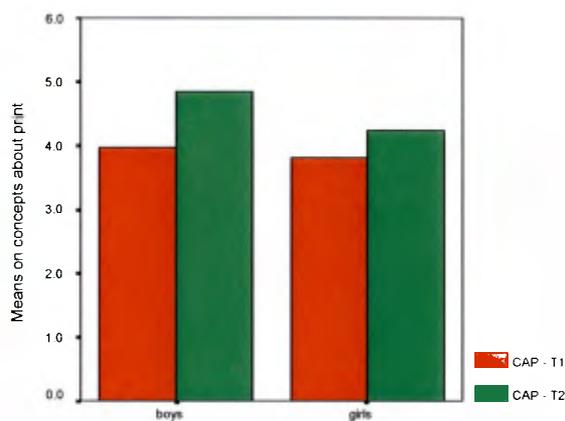
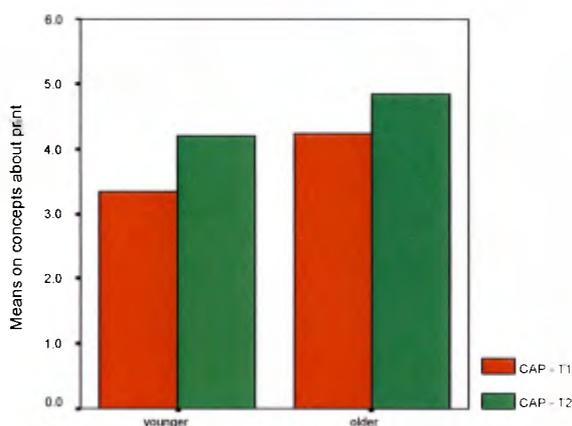


Figure 6.6: Mean scores on CAP relative to age group at T1 and T2



6.4.2 Further analyses of children's performance on CAP

A further analysis was conducted in order to investigate the number of children that fell into each total score group of CAP items (Table 6.2). Earlier it was shown that children's mean scores in CAP increased significantly from T1 to T2 (Table 6.1). Nevertheless, from children's responses at T2 measurement it seemed that, despite the increase, which seemed to be mainly related to children in class C, there were still children with very poor knowledge of the concepts about print.

Table 6.2: Number of children classified as having poor, intermediate and good knowledge relative to CAP at T1 and T2

Time 1	Time 2			Total
	Poor	Intermediate	Good	
Poor	5	2	4	11
Intermediate	2	4	15	21
Good	1	4	17	22
Total	8	10	36	54

According to their scores in CAP, children were divided into three groups: ‘poor’, ‘intermediate’, and ‘good’. These categories were adapted from Ehri and Wilce’s (1985) study about children’s ability to read words for describing children’s knowledge of concepts about print. The same procedure was adopted as for the performance on the phonological awareness task.

Table 6.2 presents the number of children who fell into each group of CAP knowledge from T1 to T2. In the ‘poor’ group, five cases did not seem to have developed their knowledge of CAP from T1 to T2. Two cases developed ‘intermediate’ knowledge of CAP, and four were shown to have acquired ‘good’ knowledge of CAP at T2. In the ‘intermediate’ group two cases seemed to have regressed to the ‘poor’ group, which suggests that their knowledge of CAP at T1 was not maintained. In the ‘good’ group four children regressed to the ‘intermediate’ group, and one to the ‘poor’ group. Overall, there were nine children that did not make any progress, showing that they still had poor or intermediate knowledge of CAP. Seven children seemed to score worse at T2 than at T1, falling back to the intermediate and poor groups, whereas twenty one children made progress and developed their CAP knowledge, falling into the intermediate and good groups. However, there were children who were found to still have poor and insecure knowledge of concepts about print by the end of the year. Investigating the association

between children's performance on CAP at T1 and T2, it was found that there was significant association between them, Pearson Chi-square= 73.718, df= 36, p= .000.

6.5 Discussion

The analysis illustrated that at T1 there were no group effects, indicating that the classes were equivalent, and that gender and age were not significant factors in progress at that point. However, the results showed that there was overall progress in children's scores after completing six months from the first measurement, but this was mostly related to the marked progress made by children in class C. Specifically, children of class C seemed to have significantly better knowledge of concepts about print than children in class A. In interpreting this finding, inferences can be made about the impact of the instruction received within six months upon children's knowledge of concepts about print from T1 to T2. This finding supports Clay's (1989) and Griffin et al's (1985) suggestions regarding children's progress in CAP after they have spent some time in school. According to the teachers' reports they all said that they included in their instructional programme the teaching of CAP. However, though all three classes received some instruction on CAP, only class C made marked improvement. These results may suggest that children in classes A and B may have needed more systematic teaching on CAP or it may have been that the teacher C had immersed children in word reading, which may have influenced the development of children's knowledge of CAP. As at T1 measurement, neither gender nor age group had any effect on children's scores at T2.

Exploring children's overall performance on the items of CAP task at both times of testing, it was found that 10 children had ceiling scores at T1. Nevertheless, only five of them had secure knowledge of concepts about print at T2. This finding shows, as Clay (1989) has argued, that, although children responded correctly to some items at T1, their responses were not conscious; they did not know why they were correct and could not check their decisions. At T2 the number of children who reached ceiling increased. Using three categories of knowledge, the investigation of progress showed that the majority of children achieved secure knowledge, but a worrying 15% had poor knowledge at the point of entry to school, and this was still the case after one year in kindergarten.

6.5.1 Conclusion

The results of this study show that, although there was an increase in children's scores at the end of the year, this was related to the significant progress made by children in class C. Though classes were equivalent at T1, children in class C made greater improvement compared to the others. No gender and age group differences were found at both testing times. Using the three categories of knowledge, investigating the progress made in CAP, showed that although there was a considerable number of children who still had poor knowledge at the end of the kindergarten year, the majority of them had secure knowledge.

CHAPTER 7: Reading

The evidence that illustrates the importance of reading and of what is related to reading acquisition has been set out in the Literature Review chapter.

7.1 Purpose of the investigation

The present investigation was undertaken to assess Greek kindergarteners' emerging reading skills at the beginning and at the end of the kindergarten year. The school started in mid-September. Children were tested during their first term and finally at the end of the school year (June). The teachers had not started teaching the early literacy syllabus until January. The major purpose of the investigation was to investigate kindergarteners' skills in reading words in isolation and within context, explore their word reading skills at the beginning of the year, determine whether these skills changed during their time in kindergarten, and whether the age, gender and school class had any effect on their performance when reading by the end of the school year. Developing the skill to distinguish individual letters and combine them in order to 'read' unknown words is amongst the aims of the new curriculum regarding literacy in Greek kindergarten. However, the curriculum suggests that kindergarteners should not be corrected when trying to read and should not be pointed out the right way to read.

7.2 Materials

Two reading tasks namely word reading and sentence reading were assessed at T1. The word reading task consisted of three high frequency words: **μωρό (baby)**, **ψάρι (fish)**, **φόρεμα (dress)**, and the sentence reading task with one simple sentence consisted of four words: **Φοράω ένα κίτρινο καπέλο (I am wearing a yellow hat)**. Thus, at T1 the reading tasks required children to attempt to read seven words in all. At T2 the sentence was replaced by a short passage taken from the reading book of the first grade, which is standardised across schools, and consisted of twenty-three words (Appendix 10). Thus, the reading tasks at T2 required children to attempt to read the same simple high frequency words of T1 and the short passage, making up twenty-six words in all.

7.3 Procedure

Children were video-recorded individually while attempting to read. The video camera was used for recording children's responses to the task to ensure reliability of data collection. The setting was a private room within the kindergarten. Each individual was introduced to the procedure and notified about the video recording. In the word reading task, the child was given an A4 format paper on which the three nouns (two two-syllable and one three-syllable) were written and asked to read them. Before the testing items, a practice word was given to them in order to understand what the task was asking. Likewise, in the text reading task, the sentence and the short passage were printed on an A4 format paper and the child was asked to attempt to read them. There were no practice items in these two tasks. Many children said that they did not know how to read but the researcher asked them to try to read whichever word they could. When the child was not able to find the right word, they proceeded to the next testing item. All children were prompted to make self-corrections. It should be also noted that there was no expectation of a high level of reading accuracy from the children particularly at T1. The word reading tasks were included just to gain some picture of children's early developing skills. The sequence of the items was the same for all children. The focus of the video camera was solely on the child. The duration of each task was five minutes, depending on each case. The same procedure was followed at both measurements.

Children's responses were coded, scored, and quantitatively analysed. Each correct response was awarded 1 point; thus, the word reading task consisting, of three words, had a total of three; sentence reading, consisting of four words had a total of four; text reading, comprising twenty-three words, had a total of twenty- three. Because the word reading task and the sentence reading task had few items it was decided to add up the children's scores on the reading tasks at each testing time so that a more powerful statistical analysis of the children's word reading skills could be performed. Thus, the word-reading task at T1 had a total of seven words and a total of twenty-six words at T2. Apart from analysing the performance of the total cohort, a further analysis was made in relation to children's school class, gender, and age group. Also, children's attempts were analysed qualitatively in order to investigate their emerging reading strategies.

7.4 Results

The investigation of word reading skills focused basically on children's composite word reading scores at both times, and these were analysed in terms of school class, age, and gender. The exploratory analysis that was made at T1 found that, with the exception of a small number of children who managed to read some of the words, the majority of them could not read. At T2 it was shown that the results were the same and just a few children managed to read some of the words. The error analysis performed was made on the items of each reading task applied, in order to clearly show the strategies children used to try and read the target word.

7.4.1 Analysis of children's performance on word reading at T1 and T2

Table 7.1 Mean scores on word-, sentence- and text- reading relative to class at T1 and T2

	Time 1				Time 2			
	Word reading		Sentence reading		Word reading		Text reading	
	M	SD	M	SD	M	SD	M	SD
Total	.09	.401	.54	.926	.83	1.18	2.69	5.59
Class A	.00	.000	.17	.383	.44	.984	1.22	4.45
Class B	.06	.25	.19	.403	.56	.727	.00	.000
Class C	.20	.616	1.15	1.226	1.4	1.43	6.15	6.98

The descriptive analysis of children's performance on word reading at T1 and T2 (Table 7.1) suggested that, due to the large number of zero scores at both testing times, it would be better to investigate the number of children who fell into each word reading ability group, and how their ability changes over time (Table 7.2). Children were divided into five word reading ability groups: zero, emergent, novice, advanced, and expert. At T1, children who fell into the 'zero' group were those who did not manage to read any words; 'emergent' group were those who read from 1-2 words; 'novice' group were those who read from 3-4 words; 'advanced' group were those who read from 5-6 words, and

‘expert’ group were those who read all seven words. At T2, the same groups were used to categorise children’s reading ability but more scores were included in each group. Specifically, the ‘emergent’ group were those children who read from 1-6 words; ‘novice’ group were those who read from 7- 12 words; ‘advanced’ group were those who read from 13-18 words; ‘expert’ group were those children who read from 19-26 words. The idea of grouping children according to the number of words read correctly was based on Ehri’s (1991) methodology in her study of young children’s spelling and adapted to the aims of the present study.

The exploratory analysis, however, showed that there was a small number of cell counts and in many instances no cases were found in the reading ability groups (‘emergent’, ‘novice’, ‘advanced’, ‘expert’). Based on these findings it was decided to merge the ability groups and make them three overall: a) the ‘zero’, b) the ‘emergent/novice’ group and c) the ‘advanced/expert’ group. Table 7.2 shows the number of children that fell into each word reading ability group. The table suggests that at T1, apart from 36 children who scored zero, 16 children were found to have ‘emergent/novice’ reading skills and 2 children were shown to have ‘advanced/expert’ reading skills from the beginning of the kindergarten year. No children were found to have read all seven words correctly. Thus, on their entry into kindergarten over half of the sample of the present study showed ‘zero’ reading skills, whereas eighteen children appeared to have some skills in reading. This means that by the end of the year, and before going to the first grade, those children would be expected to become experts.

Table 7.2: Number of children classified as having ‘zero’, ‘emergent/novice’, ‘advanced/expert’ knowledge relative to word reading at T1 and T2

Time 1	Time 2			Total
	Zero	Emergent/Novice	Advanced/Expert	
Zero	24	11	1	36
Emergent/Novice	5	8	3	16
Advanced/Expert	0	0	2	2
Total	29	19	6	54

At T2, zero scores became fewer (n=29). Nineteen children showed ‘emergent/novice’ reading skills and six were found to have ‘advanced/expert’ reading

skills. As was expected from the findings of T1, there were a few children who became 'experts' in reading by the end of the kindergarten year. Table 7.2 further illustrates the progress observed in children's word reading ability from T1 to T2. Twenty-nine children out of fifty-four still could not read any of the words at T2 and none of them read all twenty-six words. However, it was shown that twelve children out of thirty-six who were in the 'zero' group at T1 shifted to higher reading ability groups at T2, where eleven children fell into the 'emergent/novice' group and one into the 'expert' group. Moreover, the analysis showed that five children out of sixteen in the 'emergent/novice' group at T1 regressed to the 'zero' group at T2, whereas eight children did not show any progress. The remaining three improved from T1 to T2, falling into the 'advanced/expert' group. Additionally, the investigation of children's improvement in word reading skills over time illustrated that, though the children who were in the 'advanced/expert' group at T1 did not appear to have shifted at T2, because they remained in the same group, they read more words by the end of the kindergarten, as it was expected. Also, exploring the association between children's performance on reading at T1 and T2, the chi-square test was performed and indicated that there was significant association between children's reading skills at T1 and T2, Pearson Chi-square= 22.936, df=2, p= .000.

The investigation of word reading relative to school class at T1 (Figure 7.1) indicated that the vast majority of the responses were zero scores, where it was shown that children in class A had the most and children in class C the fewest. From the 16 children who were found to have read from 1-4 words, falling into the 'emergent/novice' group, 3 were from class A, 3 were from class B and 10 were from class C. The two children who were found to have 'advanced/expert' word reading skills at T1 were both from class C. However, none of the children scored at ceiling. These findings show that 50% of the children in class C had developed some reading skills on their entry into kindergarten; this advantage was expected to be enhanced by schooling, therefore children of class C would further develop their reading skills by the end of the year.

Relative to school class, the investigation at T2 (Table 7.3-Figure 7.2) showed that from the 19 children who were found to have 'emergent/novice' word reading skills (having read from 1-12 words at T2), 5 were from class A, 7 were from class B and 7 children were from class C.

Figure 7.1: Number of children in each school class relative to word reading scores at T1

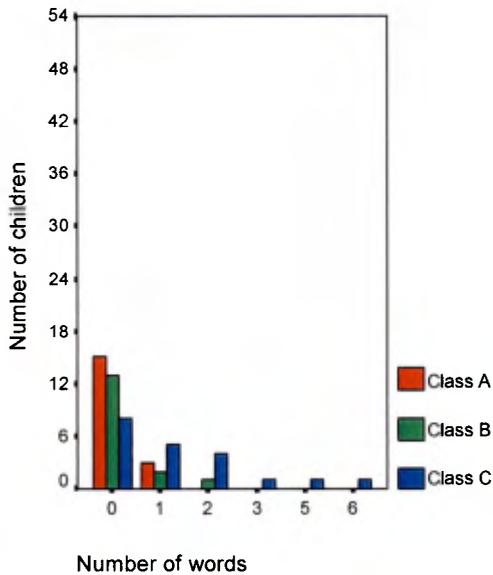


Figure 7.2: Number of children in each school class relative to word reading scores at T2

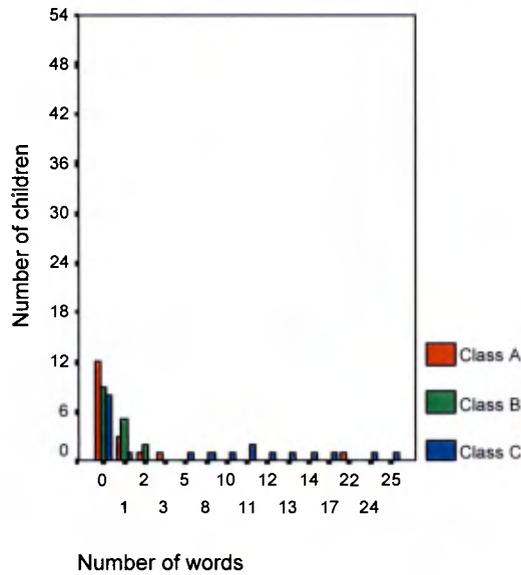


Table 7.3: Number of children classified as having ‘zero’, ‘emergent/novice’, ‘advanced/expert’ knowledge in word reading relative to class at T2

Groups	Class A	Class B	Class C	Total
Zero	12	9	8	29
Emergent/Novice	5	7	7	19
Advanced/Expert	1	0	5	6

Likewise, from the 6 children who were shown to have ‘advanced/expert’ word reading skills at T2 (having read 13-26 words) 1 was from class A and 5 were from class C. According to the teacher’s C report she applied tasks where children were required to decode; thus, as it was expected, the advantage of class C was enhanced by the instruction received during their time in kindergarten, resulting in developing further their reading skills. These findings suggest that only children from class C are really getting off the ground. However, children from both classes A and B showed ‘emergent/novice’ word reading skills by the end of the kindergarten year, while there was also one case of ‘advanced/expert’ reading skills in class A. This suggests that these children had started

developing some reading skills before receiving any formal and direct literacy teaching. Investigating the association between children’s performance on reading at T2 and the school class the chi-square test showed that there was no significant relation between them, Pearson Chi-square= 7.646, df=4, p= .105.

The results of the analysis regarding children’s gender at T1 (Fig. 7.3) indicated that from the 11 boys found to have read at least 1 word, 10 of them had developed ‘emergent/novice’ word reading skills by reading 1-4 words and 1 ‘advanced/expert’ skills by reading 5-7 words. On the other hand, 6 girls managed to read from 1-4 words, showing ‘emergent/novice’ word reading skills, and 1 girl ‘advanced/expert’ skills by reading 5-7 words. The overall results indicated that both genders had similar performance.

Figure 7.3: Number of children in each gender group relative to word reading scores at T1

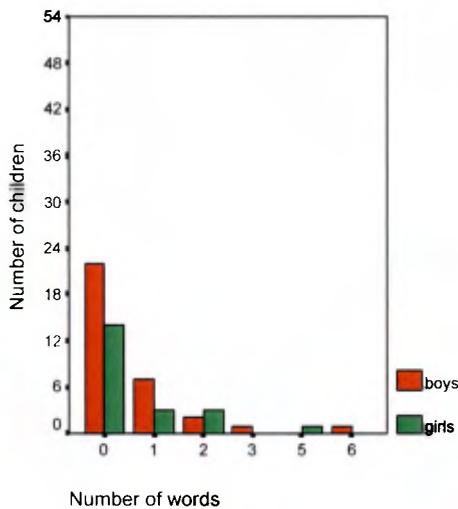
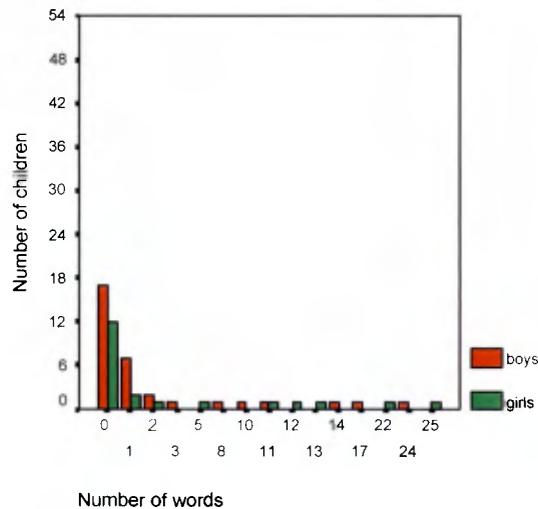


Figure 7.4: Number of children in each gender group relative to word reading scores at T2



The investigation of children’s word reading skills in relation to gender at T2 (Table 7.4-Figure 7.4) indicated that, although more boys (n=13) than girls (n=6) had developed ‘emergent/novice’ word reading skills, the number of boys and girls in the other reading ability groups was the same. By performing the chi-square test the analysis further showed that there was no significant association between children’s reading skills at T2 and gender, Pearson Chi-square= .815, df=2, p= .66.

Table 7.4: Number of children classified as having ‘zero’, ‘emergent/novice’, ‘advanced/expert’ knowledge in word reading relative to gender at T2

Groups	Boys	Girls	Total
Zero	17	12	29
Emergent/Novice	13	6	19
Advanced/Expert	3	3	6

In relation to age, children’s performance on word reading at T1 (Fig. 7.5) showed that only three younger children out of a group of twenty managed to read from 1-4 words, illustrating that they had ‘emergent/novice’ word reading skills at the beginning of the year. Regarding the performance of the older group, the analysis indicated that thirteen older kindergarteners read from 1-4 words, showing ‘emergent/novice’ word reading skills and two children read 5-7 words, demonstrating ‘advanced/expert’ word reading skills on their entry into kindergarten. None of them read all seven words at T1. Clearly, older kindergarteners did better than the younger ones at the beginning of the kindergarten year, starting off with an advantage which was expected to take off by the end of the year. However, younger kindergarteners’ performance showed that, though less cognitively advanced compared to older ones, a few of them had emergent reading skills, which might be developed even more by the end of the year through schooling.

Relative to age the results of the exploration at T2 (Table 7.5-Figure 7.6) were expected to indicate that younger kindergarteners would do worse than older ones, as they did at T1. The analysis showed that a large number of older kindergarteners fell into the ‘emergent/novice’ group of word reading skills. However, the investigation further revealed that 3 out of the 6 children found in the ‘advanced/expert’ group were younger kindergarteners. Also 1 out of the 3 children who were found to have read all 26 words was from the younger group. These findings suggest that at the beginning of the year the younger group clearly were not as advanced as the older group and it could be expected that this would continue until the end of the year.

Figure 7.5: Number of children in each age group relative to word reading scores at T1

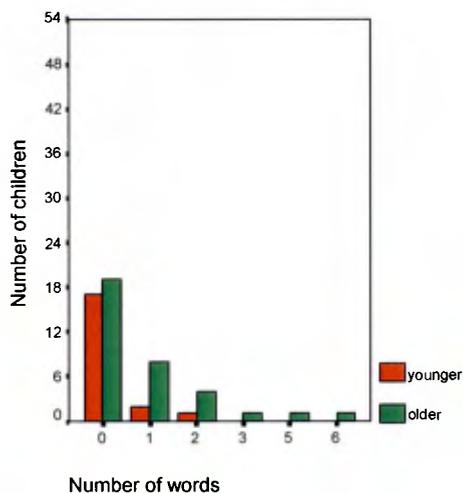


Figure 7.6: Number of children in each age group relative to word reading scores at T2

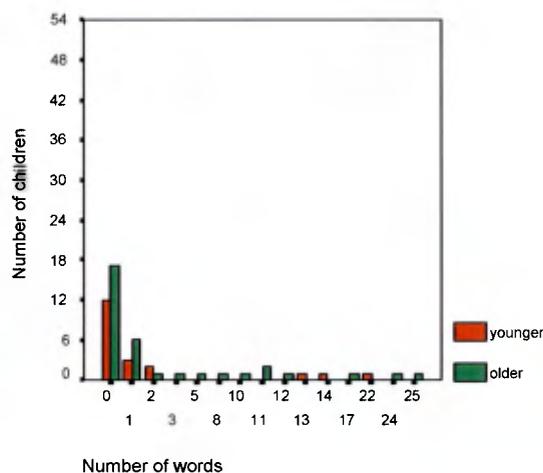


Table 7.5: Number of children classified as having ‘zero’, ‘emergent/novice’, ‘advanced/expert’ knowledge in word reading relative to age at T2

Groups	Younger	Older	Total
Zero	12	17	29
Emergent/Novice	5	14	19
Advanced/Expert	3	3	6

However, the analysis illustrated that by the end of the kindergarten year, after one year of schooling, apart from those younger kindergarteners who showed ‘emergent/novice’ word reading skills, very few of them had managed to develop ‘advanced/expert’ word reading skills, indicating the effect of the informal literacy teaching on children’s skills in reading. Additionally, the fact that there were 2 older kindergarteners who reached ‘expertise’ in word reading skills before they went to the first grade may indicate the positive effect of the literacy experiences on children’s reading skills. A chi-square test was conducted on these data in order to explore the association between children’s performance on reading at T2 and their age and it showed

that there was no significant relation between them, Pearson Chi-square= 1.603, df=2, p=.449.

7.4.2 Analysis of the errors made in each word reading task at T1 and T2

Further examination of children's word reading skills further focused on the errors made in word reading tasks, namely the single word reading task at T1-T2, the word sentence reading task at T1, and the word text reading task at T2. The errors were classified into error groups and analysed in relation to school class. Six of these groups were adapted from the study by Stuart and Coltheart (1988), and three more were added by the researcher in order to illustrate all the errors made by kindergarteners while attempting to read. Table 7.6 presents the groups of errors that children made in single word reading at T1 and T2.

Analysing the type of errors on item 1 in the single word reading task (Table 7.6), it was indicated that whilst at the beginning of the school year children were using irrelevant information when attempting to read the word, by the end children were recognising segments of the word, using relevant information to reach the correct answer, and they also stopped naming the word's letters. Regarding item 1, eight attempted to read it at T1. Two children from class C read it correctly, whereas 6 children (two from class A and four from class B) did not. The rest of them (n=46) refused to read it. At T2, 23 attempted to read item 1. Thirteen (class A: 2, class B: 2, class C: 9) read it correctly, and 10 (class A: 3, class B: 4, class C: 3) did not. The rest of them (n =31) refused to read it. There was a positive shift regarding their attempts to read and the type of errors they made, showing that children depended more on the graphic cues of the target words, which, in turn, illustrated that children started gradually developing their word reading skills. The response rate was very low at both times with the most frequent errors made being the use of letter or letter segments and the utterance of the word's sounds without blending them.

Table 7.6: Error analysis of single word reading relative to school class at T1 and T2

Single word reading	Time 1				Time 2			
	A	B	C	T	A	B	C	T
Item 1								
Partial/irrelevant info used	0	1	0	1	0	0	0	0
Letter/letter segments used	1	1	0	2	2	1	1	4
Beginning letter/s used	0	1	0	1	0	1	0	1
Final letter/s used	0	0	0	0	0	0	0	0
Both beginning and final letters	0	0	0	0	1	0	1	2
Pronounced non blended sounds	1	0	0	1	0	2	1	3
Name the letters	0	1	0	1	0	0	0	0
No response	16	12	18	46	13	10	8	31
Total	18	16	18	52	16	14	11	41
Item 2	A	B	C	T	A	B	C	T
Partial/irrelevant info used	0	1	0	1	0	0	0	0
Letter/letter segments used	3	3	1	7	0	0	0	0
Beginning letter/s used	0	1	0	1	1	1	0	2
Final letter/s used	0	0	0	0	0	1	1	2
Both beginning and final letters used	0	0	0	0	0	0	0	0
Pronounced non blended sounds	2	0	0	2	0	0	0	0
Name the letters	0	1	1	2	0	1	0	1
No response	13	9	16	38	13	6	9	28
Total	18	15	18	51	14	9	10	33
Item 3	A	B	C	T	A	B	C	T
Partial/irrelevant info used	0	0	0	0	0	0	0	0
Letter/letter segments used	1	1	0	2	0	0	0	0
Beginning letter/s used	0	1	0	1	0	0	0	0
Final letter/s used	0	1	2	3	2	1	3	6
Both beginning and final letters	0	0	0	0	1	0	1	2
Pronounced non blended sounds	1	1	2	4	2	3	0	5
Name the letters	0	1	1	2	1	0	0	1
No response	16	11	15	42	10	12	7	29
Total	18	16	20	54	16	16	11	43

Regarding Item 2 in the single word reading task (Table 7.6), the error analysis showed that at T1 13 (class A: 5, class B: 6, class C: 2) children who attempted to read it did not succeed. Thirty-eight children refused to give any response, and three read it correctly. Between the types of reading errors the most frequent were the use of letter/s or letter segments, followed by the utterance of sounds and the letter naming. Additionally,

there were no observations of final letters used or both beginning and final letters used. At T2, 28 children refused to respond. Twenty-one read Item 2 correctly and 5 (class A: 1, class B: 3, class C: 1) did not. At T2 there were no observations of partial/irrelevant information used; of letter/letter segments used; of both beginning and final letters used; and of pronouncing sounds without blending them. The most frequent types of errors were the beginning letter used and the final letter used. Nevertheless, the analysis of the errors in Item 2 at T2 showed that all three classes had similar performance regarding the number and type of positive errors made. Specifically, when they were trying to read a word they used more information relevant to the target word in order to identify it. Thus, the investigation of children's errors revealed that all three classes scored similarly both at T1 and T2, and that there was a positive shift on behalf of all three regarding their successful attempts to read. Children in class C were found to make fewer errors than children in classes A and B at both testing times.

The analysis of Item 3 (Table 7.6) showed that none of the children managed to read it at T1. Forty-two children refused to respond. Twelve (class A: 2, class B: 5, class C: 5) children attempted to read it but they did not succeed. Most frequent errors were the utterance of sounds without blending them, followed by the final letter/s used, the use of letter/letter segments, and letter naming. There were no observations of partial/irrelevant information used, and of both beginning and final letters used at T1. At T2 29 refused to respond, whereas 25 attempted to read it. Eleven children succeeded in reading Item 3, whereas 14 (class A: 6, class B: 4, class C: 4) did not. The most frequent types of errors were the use of final letter/s, followed by the utterance of sounds, and the use of both beginning and final letter/s. There were no observations of partial/irrelevant information used, of letter/letter segments used, and of beginning letters used. Comparing the errors made between T1 and T2, it was suggested that at T2 children, apart from making more attempts to read, were found to basically use parts of the target word in order to identify it. Additionally, they seemed to sound out the word but failed in blending the sounds to read. Moreover, as in the previous items, some of the children tried to name the letters because they believed that they might get help from letter names, or because they might have thought that reading is just naming the letters of a word. In terms of class, the analysis of the errors that children made in Item 3, which was considered to be more

difficult than the others because it was a tri-syllable word, showed that although at T1 children in classes B and C made more positive errors than in A, at T2 children of class C were found to have made more positive errors than those of A and B. This suggests that children in class C made progress between T1 and T2, which specifically means that children of class C used more graphic cues of the target word to identify it than children of classes A and B by the end of the kindergarten year.

Table 7.7: Error analysis of the items in sentence word reading relative to school class

Sentence word reading		A	B	C	Total
Item 1	Graphic info used	2	4	1	7
	Partial/irrelevant info used	1	0	0	1
	No response	15	12	18	45
	Total	18	16	19	53
Item 2	Graphic info used	0	2	1	3
	Partial/irrelevant info used	2	0	0	2
	No response	13	11	8	32
	Total	15	13	9	37
Item 3	Graphic info used	4	3	2	9
	Partial/irrelevant info used	0	0	0	0
	No response	14	13	15	42
	Total	18	16	17	51
Item 4	Graphic info used	2	3	1	6
	Partial/irrelevant info used	2	0	0	2
	No response	14	13	11	38
	Total	18	16	12	46

Since children in class C were receiving instruction in decoding, they had begun to develop their skills before entry into primary school. Additionally, the analysis of children's letter knowledge indicated that class C had better letter sound knowledge than the others, which means that they may have also been trying to map the words onto sounds in order to decipher the target word. This may explain their use of graphic cues whilst trying to read.

Table 7.7 illustrates the error analysis of children's sentence word reading. The errors made in each item are grouped into categories depending on the cues that children used when trying to read each word. The results of the analysis showed that none of the children used any contextual information in order to read the words of the sentence. The response rate was low, and few children attempted to read any of the four words. The most frequent types of error made while attempting to read were the graphic information used followed by a few cases of partial/irrelevant information used. These findings suggest that children did not get any help from the context when trying to read; in contrast, they predominantly used graphic cues from the target words to reach the correct answer. In relation to school class the analysis indicated that in Item 1, nine children attempted to read. Eight of them (class A: 2, class B: 4, class C: 1) responded incorrectly using graphic information and only one succeeded. This is indicative of the positive type of the errors made. Forty-five children refused to attempt to read. Children in class B appeared to make more positive errors than the other two classes.

Item 2 seemed to be easier compared to the others, because fewer children refused to attempt to read it. The analysis showed that twenty-two children tried to read it, with seventeen succeeding and five failing. From these children 3 (class B: 2 and class C:1) used graphic information and 2 (class A: 2) used partial/irrelevant information. The rest of the cohort did not try. In Item 3, 12 children attempted to read it, with only 3 of them succeeding. All 9 children (A: 4, B: 3, C: 2) who failed used graphic information. The rest refused to attempt it. Finally, 16 children tried to read Item 4, with 8 succeeding and 8 failing. From the latter group, 6 children (class A: 2, class B:3, class C:1) used graphic information and 2 from class A used partial/irrelevant information. The rest of them (n=38) did not try at all. The findings in relation to the type of errors made by each school class illustrate that none of the children from classes B and C used any

partial/irrelevant information. Additionally, children in class C were found to have made more attempts to read compared to children in classes A and B, and fewer errors. However, it was shown that regarding the errors made, children in class B made more positive errors than children in class A.

Table 7.8: Error analysis of the items in text word reading at T2 relative to school class

Item	Type	A	B	C	T	Item	Type	A	B	C	T
Ένα Item 1	Graphic info	2	1	1	4	της Item 13	Graphic info	1	0	1	2
	Partial/irrel.	0	0	0	0		Partial/irrel.	1	0	0	1
	No response	16	15	9	40		No response	15	16	16	47
	Total	18	16	10	44		Total	17	16	17	50
ταξί Item 2	Graphic info	0	1	2	3	κυρα Item 14	Graphic info	0	1	1	2
	Partial/irrel.	0	0	0	0		Partial/irrel.	1	0	0	1
	No response	17	15	12	44		No response	16	15	14	45
	Total	17	16	14	47		Total	17	16	15	48
ξεκίνησε Item 3	Graphic info	0	1	3	4	Ξένης Item 15	Graphic info	1	0	3	4
	Partial/irrel.	0	0	0	0		Partial/irrel.	1	0	0	1
	No response	17	15	14	46		No response	15	16	14	45
	Total	17	16	17	50		Total	17	16	17	50
με Item 4	Graphic info	0	0	0	0	δεν Item 16	Graphic info	0	1	2	3
	Partial/irrel.	0	0	0	0		Partial/irrel.	1	0	0	1
	No response	17	16	11	44		No response	16	15	13	44
	Total	17	16	11	44		Total	17	16	15	48
μεγάλη Item 5	Graphic info	1	0	2	3	ήξερε Item 17	Graphic info	0	0	1	1
	Partial/irrel.	0	0	0	0		Partial/irrel.	1	0	0	1
	No response	16	16	13	45		No response	16	16	15	47
	Total	17	16	15	48		Total	17	16	16	49
ταχύτητα Item 6	Graphic info	0	0	3	3	τα Item 18	Graphic info	0	0	0	0
	Partial/irrel.	0	0	0	0		Partial/irrel.	1	0	0	1
	No response	17	16	12	45		No response	16	16	11	43
	Total	17	16	15	48		Total	17	16	11	44
Παραλίγο Item 7	Graphic info	0	1	4	5	σήματα Item 19	Graphic info	0	0	2	2
	Partial/irrel.	2	0	0	2		Partial/irrel.	1	0	0	1
	No response	15	15	12	42		No response	16	16	14	46
	Total	17	16	16	49		Total	17	16	16	49
θα Item 8	Graphic info	1	0	2	3	και Item 20	Graphic info	1	0	3	4
	Partial/irrel.	2	0	0	2		Partial/irrel.	1	0	0	1
	No response	13	16	9	38		No response	16	16	15	47
	Total	16	16	11	43		Total	18	16	18	52
γινόταν Item 9	Graphic info	1	1	2	4	περνούσε Item 21	Graphic info	1	1	2	4
	Partial/irrel.	2	0	0	2		Partial/irrel.	1	0	0	1
	No response	15	15	15	45		No response	16	15	16	47
	Total	18	16	17	51		Total	18	16	18	52
ατόχημα Item 10	Graphic info	0	1	0	1	με Item 22	Graphic info	0	0	0	0
	Partial/irrel.	2	0	0	2		Partial/irrel.	1	0	0	1
	No response	15	15	14	44		No response	16	16	13	45
	Total	17	16	14	47		Total	17	16	13	46
Ο Item 11	Graphic info	0	0	0	0	κόκκινο Item 23	Graphic info	0	1	2	3
	Partial/irrel.	1	0	0	1		Partial/irrel.	1	0	0	1
	No response	14	16	10	40		No response	16	15	14	45
	Total	15	16	10	41		Total	17	16	16	49
σκύλος Item 12	Graphic info	1	0	1	2						
	Partial/irrel.	1	0	0	1						
	No response	15	16	14	45						
	Total	17	16	15	48						

Table 7.8 presents the error analysis of children's text word reading. The results showed that the response rate to all items was low. Moreover, none of them used any contextual cues to read the target words. In contrast, they used graphic as well as partial/irrelevant information in order to decode the target words. In relation to school class, the results showed that children in class C made more attempts to read compared to children in classes A and B. In text reading children in class C made fewer errors and had more correct responses than those in classes A and B. Additionally, children in class B did not succeed in any of the items.

Exploring those items individually, it was shown that regarding Item 1 (the word 'ένα'-bisyllabic), which was also found in word reading within the sentence task, no children from classes A and B were able to read it. Specifically, 4 children (class A:2, class B:1, class C:1) attempted to read it and did not succeed, whereas 10 who were from class C gave correct responses. However, during the sentence reading task, 17 children managed to read it successfully.

Regarding Item 4 (the word 'με'-monosyllabic) it was found that 10 children (class A: 1 and class C: 9) tried to read it and gave a correct response. All the rest refused to attempt it. Item 11 (the definite article 'ο'), which might have been considered the easiest testing item out of all since it is just one sound, did not seem to be so easy for children of class B - all of them refused to attempt to read it. From class A, 4 children tried to read it and only one did not succeed. In class C, half of them succeeded and half of them refused to attempt it.

Items 20 (the word 'και'), 21 (the word 'περνούσε'), and 23 (the word 'κόκκινο') were considered to be more difficult for kindergarteners than the others, because the first two included vowel digraphs, and the third geminate letters. Two children from class A tried to read Item 20 and both of them gave an incorrect response. None from class B attempted to read it, and 5 children from class C tried to read it, 2 giving correct responses and 3 incorrect.

In relation to Item 21, the results showed that 5 children (class A:2, class B:1, class C:2) did not succeed, and 2 children from class C gave correct responses. Regarding Item 23, the investigation indicated that 9 children tried to read it. Of those, 5 (class A: 1 and class C: 4) children succeeded, and the rest of them (class A:1, class B:1,

class C: 2) failed. Additionally, in relation to Item 22 (the word 'με') it is suggested that even if children came across it at the beginning of the short passage (Item 4), their performance was not the same. Specifically, though one child (class A) tried and failed on Item 4, 2 children tried Item 22 and one succeeded. By contrast, all children from class B refused to try both items.

7.5 Discussion

Children were divided into five ability groups; 'zero', 'emergent', 'novice', 'advanced', and 'expert', depending on their score in word reading. However, due to the fact that there were a lot of zero cases and in some instances there was a small number of cell counts in these categories it was decided to merge them. Thus, there were three reading ability groups overall: a) the 'zero', b) the 'emergent/novice' group and c) the 'advanced/expert' group.

The investigation showed that on entry into kindergarten, over half of the participants showed 'zero' reading skills and none of them was shown to have read all testing words at the beginning of the year. However, a large number of children (n=16) had already developed 'emergent/novice' reading skills and only 2 'advanced/expert' skills. These findings fit in with Frith's (1985) and Ehri's (1995) descriptions of children's reading strategy at the early stages of reading development, though they label them differently. Children start paying attention to words' graphic features and try to read words applying grapheme-phoneme correspondences. This means that children had already developed some knowledge of letters and their sounds which helped them decoding the stimuli.

However, exploring children's performance by the end of the year, it was found that the majority had made marked progress and shifted to higher reading ability groups with six children being in the 'expert' group. More importantly, amongst those 'experts' there was a child who at T1 could not read any word. However, some children who had 'emergent/novice' reading skills at T1 regressed to 'zero' or showed no improvement, indicating that their skills were not yet secure. In relation to school class, it was shown that children in class C already had some reading skills on entry to kindergarten, which

may be related to their prior literacy experiences or to their knowledge of the sounds. This advantage was enhanced by the instruction the children received during their time in kindergarten, whereby they dealt with tasks where decoding was required. Additionally, according to the children's reports from the 25 children (A: 6, B: 7, C: 12) who were found to be able to read at least one word at the end 10 had older siblings (A: 2, B: 2, C:6). This suggests that the older siblings may have an effect on young children's literacy acquisition.

Gender did not have any effect on children's reading performance. However, age seemed to influence their performance. Specifically, the older group did better than the younger group at the beginning of the year, and was expected to take off by the end of the year. However, the younger group, though less cognitively advanced, improved their skills and even a few managed to develop 'advanced/expert' word reading skills, which means that they did remarkably well. This, in turn, resulted in there being no differences between the groups by the end of the year. This finding suggests that the instruction children received was beneficial, regardless of age. This finding is consonant with the results of children's assessment on reading attainment at the reception year in the study by Tymms et al. (1997), and with the findings from two studies by Porpodas (1990) regarding the development of children's reading skills at first grade. He has suggested that age does not seem to affect reading acquisition. On the contrary, the development of reading is affected by cognitive factors rather than age. This finding suggests that no matter how young a child is, when the literacy instruction s/he receives is effective, then the child is able to acquire literacy just as well as older children. This means that children's successful literacy acquisition also depends on the effective literacy programme received.

The error analysis of children's word reading skills showed that the response rate was low at both testing times, which suggests that children did not yet have many effective word reading strategies. Specifically, the analysis in single word reading relative to school class revealed that children in class C appeared to have made fewer and more positive errors than the other two at both testing times.

The type of errors made by children at T1 was predominantly the use of letter/s or letter segments of the testing item as cues to help them read the target word, showing that

they had some 'emergent/novice' reading skills. Fewer were the times where children were using the beginning letter/s to identify the target word. These data are consonant with what Frith (1985) and Ehri (1995) suggested about the strategies used at the first stages of reading development, where children use salient graphic features to identify the target word while the letter order is ignored and phonology is secondary. Nevertheless, there were children who used letter-sound correspondences to identify the target words. However, there were children who were just pronouncing the sounds of the word without blending them, or they were just naming the letters. At T2, apart from the cues used at T1, children appeared to also use the final letter/s, or both the beginning and final letter/s, in order to decode the target word. This is consonant with what Clay (1991) and Riley (1996b) suggested regarding developing readers' use of more refined and efficient ways as well as integrated strategies. Item 3 in single word reading task appeared to be hard for kindergarteners, because none of them managed to read it at T1. Nevertheless, there were some children at the end of the year who succeeded.

The error analysis in sentence- and text- reading revealed that the response rate was similarly low. Children did not use any contextual information to read either the sentence or the text. This finding contradicts what Marsh et al. (1981) and Frith (1985) suggested about children's use of contextual information without regard to graphic features of that unfamiliar word. Children predominantly used graphic information to decode the target words and partial/irrelevant information on a few occasions. This means that they were either using letter-sound correspondences or distinctive features to identify the target words. In relation to class the analysis in sentence reading showed that class C made more attempts to read and fewer errors than the others. Regarding the text reading the analysis relative to class indicated that the results were similar to those in sentence reading, with class C having made fewer errors and having more correct responses than A and B. Particularly, in class B none of the children succeeded in any of the items. Relative to the type of errors made, classes B and C were found to have made more positive errors than A.

7.5.1 Conclusion

The investigation of children's word reading skills illustrated that although those skills were still poor both at the beginning and end of the year, children seemed to have developed some decoding skills. Children in class C were shown to do better than the other children upon entry showing that they had some reading skills before they went to primary school. This may be related to children's prior literacy experiences or to their letter sound knowledge. This will be discussed later. Children in class C's advantage was enhanced by the instruction received in word decoding during their time in kindergarten, resulting in performing better than the others in the reading tasks. However, it is worth noting that Greek kindergarteners are not expected to be able to read at the end of the year. Although children are taught some reading-related skills there is generally very little spin off with positive word reading. The error analysis indicated that children used graphic cues rather than contextual in order to read. This means that they were either using letter-sound correspondences or distinctive features to decode the target words. Gender did not have any effect on children's reading performance. However, although age seemed to affect children's word reading skills, with the older group doing better than the younger group at the beginning, schooling did have an effect, proving that instruction is beneficial regardless of age. Thus, early literacy instruction has primed their word reading skills, and therefore children will be at an advantage in the first grade.

CHAPTER 8: Spelling

The importance of spelling and of what is related to spelling acquisition has been illustrated in the Literature Review chapter.

8.1 Purpose of the investigation

The present investigation was undertaken to assess Greek kindergarteners' emerging spelling skills. Children were tested during their first term and at the end of the school year (June). The teachers had not started teaching the early literacy syllabus until January. The major purpose of the investigation was to investigate kindergarteners' skills in name- and word-spelling, explore these skills at the beginning of the year, determine whether these changed during their time in kindergarten, and whether age, gender and the school class had any effect on their performance at spelling by the end of the school year. Part of the aims posed in the new curriculum regarding literacy in the Greek kindergarten is children's encouragement to write in any way they can; to write their names in both lower and upper case letters, to copy words, to develop their motor skills, and to understand the meaning of writing.

8.2 Materials

Children were asked to write on a piece of A4 format paper his/her name or any other names s/he knew or any words s/he knew.

8.3 Procedure

Children were video-recorded working individually on the spelling task. The video camera was used for recording children's responses to the task to ensure reliability of data collection. The setting was a private room within the kindergarten. Each individual was introduced to the procedure and notified about the video recording. There were no practice items in these tasks. Children were asked to write down their names and any other names they knew how to write, as well as all the words they knew how to write. Many children said that they did not know how to write but the researcher asked them to try to write whatever they could. All children were prompted to make self-corrections.

Children did not get any help from the researcher. The focus of the video camera was solely on the child. The duration of the each task was five minutes but depending on each case. The same procedure was followed at both measurements.

Children’s responses were coded (Appendix 10), scored, and quantitatively analysed. There were four measures from this spelling task. Children’s spelling of their own names was scored with ‘yes’ when it was spelt correctly and ‘no’, when it was not. Children’s spelling of other names they knew was scored based on whether they had spelt other names or not. Thus, the scoring was either ‘yes’ or ‘no’ respectively. Children’s word spelling was first assessed according to the total number of the words spelt and secondly on the total number of the words spelt correctly. Apart from analysing the performance of the total cohort, children’s scores were analysed in relation to school class, gender and age. Further, an analysis was made of children’s spelling errors in name- and word- writing.

8.4 Results

8.4.1 Own name spelling at T1 and T2

Table 8.1: Children’s performance at spelling their own names at T1-T2

Spelling their own name – T1	Spelling their own names – T2		
	NO	YES	TOTAL
NO	9	13	22
YES	6	26	32
TOTAL	15	39	54

Table 8.1 shows children’s performance on spelling their own names at T1 and T2. The analysis indicated that there were twenty-six children who gained ceiling score at both testing times suggesting that there was no room for improvement. Thirteen children appeared to have improved from T1 to T2 by being able to spell their own names correctly. However, six children were found to have regressed from T1 to T2, showing that their ability to spell their own names was not secure, whereas nine children were not yet able to spell correctly their names by the end of the kindergarten year. A chi-square

test was performed in order to explore the relationship between children’s spelling of their own names between T1 and T2. Pallant (2001, p.259) suggests that ‘when there are nominal variables with two categories involved in the chi-square test, then the value of continuity correction should be used in the analysis. This is Yates’ Correction for Continuity, which compensates for the overestimate of the chi-square value when used with a 2 by 2 table’. The results of the chi-square test indicated that the relationship between spelling their own names at T1 and T2 was not significant, Continuity correction= 2.182, df= 1, p= .14. This means that the number of children that spelled their names correctly at T1 is not significantly different from the number of children that spelled their names correctly at T2.

Table 8.2: Number of children in each school class who knew how to spell their own names correctly at T1 and T2

	Spelling their own names correctly		
	N	T1	T2
Total Cohort	54	32	39
Class A	18	7	11
Class B	16	9	11
Class C	20	16	17

Table 8.2 shows the number of children who spelled their own names correctly at T1 and T2. Most of the children in class C appeared to know how to spell their names from the beginning of the school year, and better than the children in the other two classes, who were found to have scored similarly. The chi-square test performed to investigate the association between the school class, and children’s knowledge of how to spell their own names correctly, showed that at T1 there was a significant association between them, Pearson Chi-square= 6.717, df=2, p= .035. This finding suggests that these children had learnt how to spell their names at home, and before receiving any instruction at school. By contrast at T2, though it was shown that seven more children were found to be able to spell correctly their names than at T1, the analysis indicated that the increase was not remarkable. In terms of class the results showed that all three classes scored similarly, Pearson Chi-square= 2.832, df=2, p= .243. These findings suggest that

children in class C knew how to write their names before they went to kindergarten doing better than the others, and they acquired this knowledge from literacy experiences at home. At the end of the school year, though there was some change, it was not remarkable and children scored similarly. However, there were still children who did not know how to spell their names correctly.

In relation to gender, the analysis indicated that more boys than girls knew how to spell their names both at T1 (boys: 20 and girls: 12) and T2 (boys: 24 and girls: 15). However, the chi-square test performed to investigate the association between children's performance on spelling their own names and gender showed that there was no significant association both at T1, Continuity Correction= .000, df=1, p= 1, and at T2, Continuity Correction= .000, df= 1, p= 1. Relative to age, more older children (n=24) were able to spell their names than younger ones (n=8) at the beginning of the year. Nevertheless, the chi-square test showed that there was no significant association between children's performance and their age at T1, Continuity Correction= 3.695, df=1, p= .055, and at T2 (younger: 12 and older: 27), Continuity Correction= 1.497, df=1, p= .221 .

8.4.2 Other names spelling at T1 and T2

Table 8.3: Number of children in each school class who tried to write other names, at T1-T2

	Spelling other names		
	N	T1	T2
Total Cohort	54	6	17
Class A	18	3	6
Class B	16	1	6
Class C	20	2	5

After they have learnt how to spell their own names, young children very often attempt to spell other names from their home environment, or the names of their friends. Table 8.3 shows the number of children who tried to spell other names e.g. family or

friends' names, apart from their own names at T1 and T2. The results of the chi-square test, performed to explore the association between the school class and whether children attempted to spell other names apart from their own, showed that there was no significant association between them both at T1, Pearson Chi-square= .970, df=2, p= .616, and T2, Pearson Chi-square= .687, df=2, p= .709. At T1, very few children tried to spell other names. The performance of all three classes was similar and none of them had more than three children who had tried to spell other names. Even though very few children attempted to spell other names, it should be indicated that these children seemed to have previous experience of the visual representation of those names at home and that this particular attempt might have not been the first. This means that parents or other family members might have shown them how to spell those names, or that children had observed them and tried to visualise and graphically represent them. Additionally, it should be suggested that, according to what the children said, the names that they tried to spell were predominantly names of family members and friends. At T2, more children were found to have tried to spell other names, though the increase was not remarkable for all three classes. This finding suggests that the informal literacy instruction received might have not initiated children into attempting to spell other names, or that children were young and might have not yet been ready to attempt to spell other names.

Further exploring children's spelling of other names in relation to gender, it was found that, although the groups did not differ much, boys (n=4) were found to try to spell other names at T1 more than girls (n=2). No association was found between children's performance and gender at T1, Continuity Correction= .000, df=1, p= 1. At T2 more boys (n=12) than girls (n=5) attempted to spell other names. However, the chi-square test showed that there was no association between children's performance and gender, Continuity Correction= .446, df=1, p= .504. The results of the analysis in terms of children's age illustrated that, though older children appeared to have made more attempts to spell other names both at T1 (younger: 2 and older: 4) and T2 (younger: 6 and older: 11) there was no association between the children's performance and their age, Continuity Correction= .000, df=1, p= 1 and Continuity Correction= .000, df=1, p= 1 respectively.

8.4.3 Number of words that children attempted to spell at T1-T2

In the exploratory analysis that was made, it was found that the distribution of scores was not normal but rather positively skewed both at T1 and T2. Zero was the most highly observed score at both testing times. The Wilcoxon Signed Rank test was performed to compare children's scores in the number of words they attempted to spell at T1 and at T2. The test showed that there was a significant time effect on children's performance, $z = -3.00$, $p = .003$. The Kruskal-Wallis test performed to investigate any differences between classes found that at T1 there was no difference, Chi-square= 1.511, $df = 2$, $p = .47$ (class A: $M = .17$, $SD = .70$; class B: $M = .75$, $SD = 2.74$; class C: $M = .35$, $SD = .74$). However, the test found that at T2 there was a significant difference between classes (Chi-square= 11.794, $df = 2$, $p = .003$), with children in class C ($M = 2.10$, $SD = 1.889$) scoring better than those in classes A ($M = .72$, $SD = 1.904$) ($p = .031$) and B ($M = .31$, $SD = .602$) ($p = .005$) (Fig.8.1). The Wilcoxon Signed Rank test, performed to explore children's performance through time indicated that only children in class C significantly improved from T1 to T2, $z = -3.196$, $p = .001$. By contrast, the other children did not show any marked progress (class A: $z = -1.166$, $p = .24$; class B: $z = -.137$, $p = .89$).

These findings suggest that at T1 the scores were just above zero and that there were no differences between classes. Nevertheless, at T2 children in classes A and B did not increase their scores and children in class C were found to have made marked progress. The results suggest that all three classes started off having similar performance. However by the end, children in class C made significant progress resulting in their scoring better than the others. These findings indicate that the instruction children in class C received may have had an effect on children's performance. According to teachers' reports, teacher C applied tasks where children were required to write small sentences, and tasks where she dictated words to the children. This may have contributed to the development of children's spelling skills. By contrast, teachers A and B focused on encouraging children to copy words, which appeared not to be very effective in relation to children's spelling skills. In case of class C there might also be a relation between children's spelling skills and their knowledge of the letter sounds.

Figure 8.1: School class mean scores on spelling words at T1 and T2

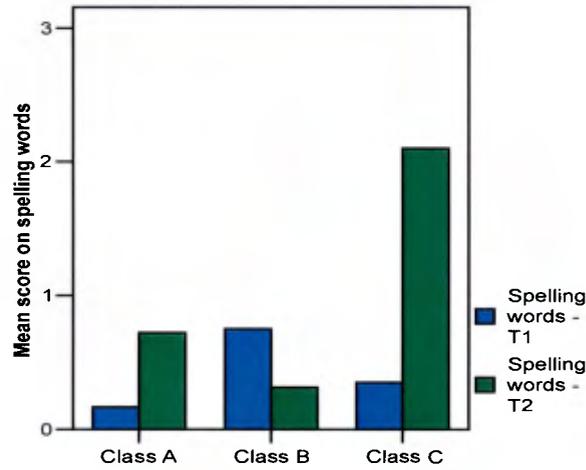


Figure 8.2: Mean scores on spelling words by gender at T1-T2

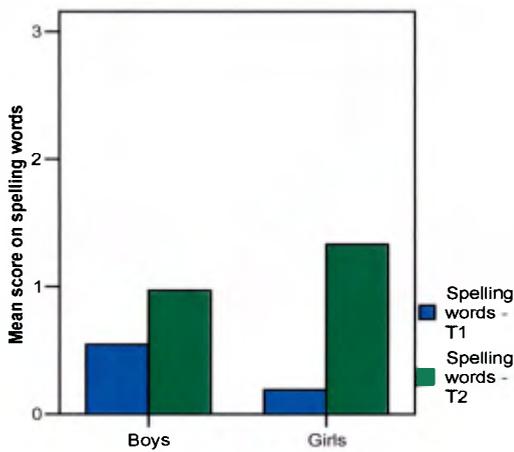
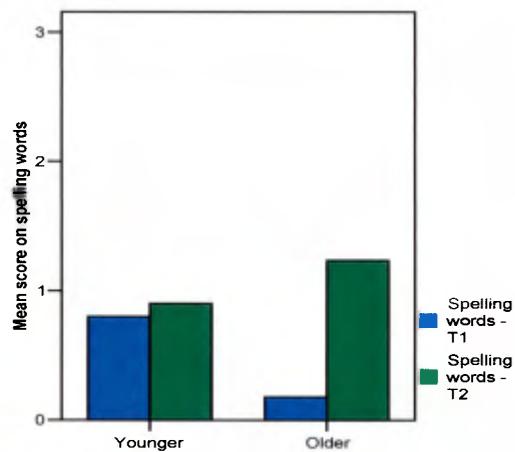


Figure 8.3: Mean scores on spelling words by age at T1-T2



Further the Mann-Whitney U test showed that gender did not have any effect on children’s scores on spelling words both at T1 ($z = -.608, p = .54$) and at T2 ($z = -.030, p = .97$) (Figure 8.2). Investigating the improvement made by the two groups from T1 to T2 the Wilcoxon Signed Rank test showed that both boys ($z = -2.329, p = .020$) and girls ($z = -$

2.023, $p = .043$) made marked progress. Likewise, there was no effect of age on children's performance at T1 ($z = -.491$, $p = .62$) and at T2 ($z = -1.21$, $p = .22$) (Figure 8.3). Exploring any progress made, the Wilcoxon Signed Rank test showed that only the older group significantly improved, $z = -3.467$, $p = .001$, whereas the younger ones did not, $z = -.511$, $p = .61$. Thus, although the younger and older groups scored similarly upon entry into kindergarten, at T2 older kindergarteners appeared to have made marked improvement. However, the increase in their scores did not result in differing significantly from the younger kindergarteners.

8.4.4 Number of words spelt correctly at T1-T2

Table 8.4: School class mean and standard deviations on the number of words spelt correctly at T1 and T2

	T1			T2		
	N	M	SD	N	M	SD
Number of words spelt correctly						
Total Cohort	54	.09	.351	54	.65	1.348
Class A	18	.00	.000	18	.22	.732
Class B	16	.13	.342	16	.25	.577
Class C	20	.15	.489	20	1.35	1.872

Table 8.4 shows children's scores in words spelt correctly at T1 and T2. Due to the floor effect observed in children's performances the use of non-parametric tests in the analysis of the present data was suggested. The Wilcoxon Signed Rank test was conducted to compare children's performance between the two testing times and found that there was significant time effect on children's scores ($z = -3.023$, $p = .003$). Moreover, the Kruskal-Wallis test performed to investigate any differences between classes showed that, though there was no class effect on children's scores at T1 (Chi-square = 2.173, $df = 2$, $p = .33$), at T2 there was significant class effect (Chi-square = 6.023, $df = 2$, $p = .049$), with children of class C scoring significantly better than children of classes A ($p = .021$) and B ($p = .031$). Investigating the improvement made by all classes from T1 to T2, the

analysis showed that only children in class C made marked progress ($z = -2.53, p = .011$), whereas children in classes A ($z = -1.342, p = .18$) and B ($z = -.816, p = .414$) did not. These findings suggest that at T1, children of all three classes started off having similar ability levels regarding spelling words correctly, which were particularly low. Moreover, children of class A scored zero, whereas those in classes B and C had mean scores slightly above zero. After six months in kindergarten, children in classes A and B did not show any change in their scores. Nevertheless, children in class C were found to have significantly increased their scores at T2, though they were still low. This suggests that there might have been an instructional effect on children's performance. As mentioned earlier teacher C employed tasks that initiated word spelling, which helped children

Figure 8.4: School class mean scores on words spelt correctly at T1 and T2

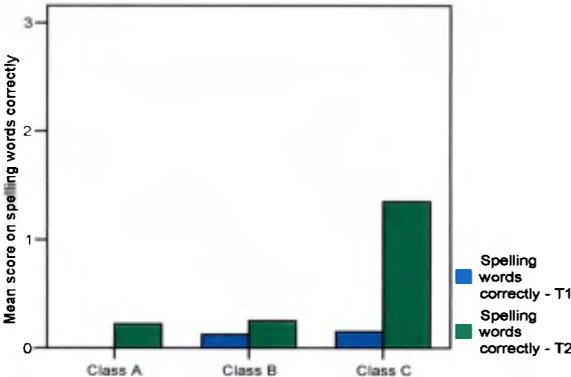


Figure 8.5: Mean scores on words spelt correctly by gender at T1-T2

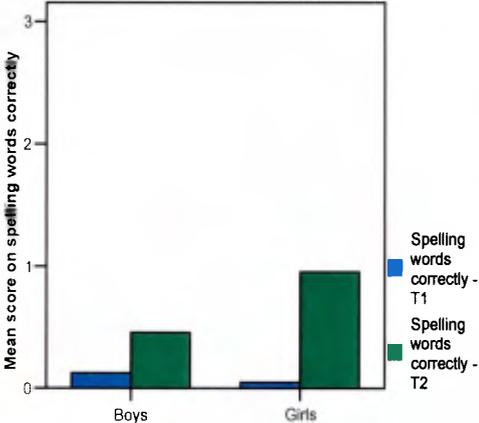
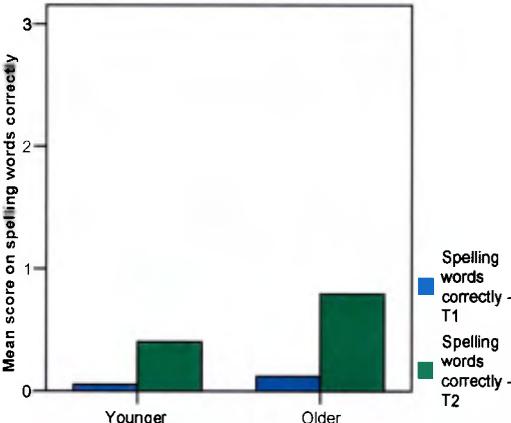


Figure 8.6: Mean scores on words spelt correctly by age at T1-T2



develop their spelling skills. Additionally, there might have been an effect of children's letter sound knowledge on their spelling performance with children applying sound-letter correspondences in order to spell.

Gender did not seem to have any effect on children's word spelling (T1: $z = -.606$, $p = .54$; T2: $z = -.829$, $p = .40$) at both testing times (Figure 8.5). Investigating the improvement made the Wilcoxon Signed Rank test showed that both boys ($z = -1.98$, $p = .048$) and girls ($z = -2.214$, $p = .027$) made marked improvement from T1 to T2. The results for younger and older children indicated that, similarly to gender, age had no influence on children's scores (T1: $z = -.533$, $p = .59$; T2: $z = -1.147$, $p = .25$). Exploring the progress made by the two groups the analysis indicated that older group made marked progress since T1, $z = -2.732$, $p = .006$, whereas the younger group did not, $z = -1.342$, $p = .18$ (Figure 8.6). However, this progress did not result in group differences.

8.4.5 Analysis of children's spelling errors in names and words at T1 and T2

An analysis was made in children's errors in spelling names at both T1 and T2. The categories used to code and to analyse children's spelling errors emerged from children's errors, with some being adapted from Stuart and Coltheart's (1988) study, or after modification from Bruck and Waters' (1988) study. Examples of children's spelling errors are presented in Appendix 11. Regarding children's errors in spelling their names, the analysis showed that from a group of twenty-two children who did not spell their names correctly at T1, seven refused to respond, whereas fifteen misspelled them. Most misspellings fell into the 'phonetic' and 'non-phonetic' error groups. Exploring the misspellings at T1 in relation to class, and starting from the highest number of errors to the lowest, it was indicated that children in class A made most errors, whereas children in class C the fewest. Children in class B had moderate performance, making predominantly phonetic errors. Additionally, there were three observations of 'reversed' letters. This type of error suggests that the speller knows the correct spelling but has not yet made the letter-forms clear in his/her mind.

At T2 the number of children who did not spell their names dropped to fifteen. Nine children refused to spell it. The rest of them (n=6) made predominantly phonetic errors. The results in relation to class showed that children in class C just refused to respond. As for those in classes A and B the latter had two observations of 'phonetic' errors, whereas the former were found to have four observations from all three types of errors. These findings suggest that at T2, children's spelling depended predominantly on the sounds of a word, without taking into account the correct orthography.

At T1 six children tried to spell other names and five gave erroneous responses. Most of them (n=4) were 'phonetic' errors. In relation to class the analysis indicated that the child, who correctly spelt another name but his/her own was from class A. At T2 the number of refusals decreased to 37. Eight cases out of the remaining 17 were incorrect responses. The largest proportion of errors was 'phonetic'. Additionally, examples of 'correct and phonetic' errors were found, which suggests that children spelt more than one name and that their spellings were both correct and incorrect. There were no cases of either 'non-phonetic' errors or 'reversed' letters (e.g. Δεqό instead of νερό or 3χ3ι instead of Εχρει) at T2. The results from the present analysis indicate that similarly to the findings in spelling their names, the errors made were basically phonetic. Moreover examples of correct spellings were found, illustrating that children gradually applied orthographic rules in their spellings.

Relative to children's attempts to spell words correctly at T1 and T2, the results indicated that 47 children refused to attempt at T1 and five out of the remaining 7 gave erroneous responses. The types of errors found were several. Nevertheless, there were no examples of 'reversed' letters errors. However, at T2 the number of refusals decreased to 32 and the spelling errors increased. Thirteen spelling errors were found with most falling into the 'phonetic error' group. The rest fell into the 'reversed' letters, 'correct and phonetic', and 'non-word' groups. These findings suggest children attempted to spell words and that the types of errors made were based on the words' phonetic patterns. This shows that children gradually started spelling orthographically by the end of the kindergarten year. Moreover, most erroneous responses were found in class C. However, examples of 'correct' spellings and 'reversals' were found in the same group (class C), which suggests that although they made more errors than the rest, some children managed

to spell some words correctly, and some just could not write some letter forms in the right direction. Children in class A appeared to have made basically ‘phonetic’ errors, whereas children in class B appeared to have just one example of spelling error (non-word).

8.4.6 Analysis of the phonetic errors in spelling names and words at T1 and T2

Analysis of children’s phonetic errors in spelling their names showed that the most frequent types of phonetic errors made at T1 were the ‘both initial and final syllables used’ e.g. ΓΡΗΓΟΡΗΣ - ΓΡΗΡΗΣ, followed by the ‘initial and letter/letter segments used’ e.g. ΓΙΑΝΝΗΣ - ΓΟΙΣ and the ‘initial syllable used’ e.g. ΧΡΥΣΑ – ΧΡΥ groups. In relation to class, the phonetic error analysis at T1 indicated that 2 children in class B were found to have used ‘both the initial and final syllables’ e.g. ΓΕΡΑΣΙΜΟΣ – ΓΕΜΟΣ and 1 used the ‘initial and letter/letter segments’ to represent their own names. Children in class A made two errors, one of ‘initial syllable used’ and one of ‘both initial and final syllables used’. Children in class C made only one error of ‘initial and letter/segment used’.

At T2, the most predominant types of errors were the ‘final letter and letter segments used’ followed by the ‘initial consonant phoneme used’ and the ‘omission of phonemes/syllables’. These errors show what Ehri (1986) and Morris and Perney (1984) have suggested, that semiphonetic spellers tend to omit vowels in the middle of words. Relative to class, the analysis of the phonetic errors showed that there were no such cases in class C. By contrast, 1 child from class A seemed to use the final letters and letter segments of their names to represent them, and another just omitted phonemes or syllables. In class B 1 child was shown to have used the initial consonant phoneme e.g. ΧΡΗΣΤΟΣ– Χ and another the ‘final and letter/letter segments’ e.g. ΓΙΩΡΓΟΣ – ΣΟΡ in order to spell their names.

The analysis of the phonetic errors made in spelling other names showed that at T1, children used several parts of the intended name(s) in order to represent it (them). Moreover, it was illustrated that in class C, one of the two children who made phonetic errors used the ‘final letter and letter segments’ to represent the intended name(s), and that the other one just omitted some phonemes/syllables. In class B, it was found that the

only phonetic error made was the 'addition of phoneme', which means that what was written was correct but that the child 'heard' more sounds while trying to spell the intended name. In class A, the child tried to spell more than one name basically using the initial phonemes, and occasionally both the initial and final syllables, thus showing an ability to distinguish at least some parts of the word which the child tried to write down.

At T2 the phonetic errors increased. Although there were no examples at T1 of initial consonant phoneme used, there were two examples found in class B at T2. Relative to class C, the only case of phonetic error was the omission of phonemes or syllables from the intended name. In class A two children tried to spell other familiar names using either the initial phoneme (consonant or vowel), the final, or both. These findings suggest that at T2, children increased the number of attempts in spelling other names using more segments of the target word to spell it. Specifically, children used the initial phonemes, final or both of the intended names to represent them. This means that they could identify the parts they could hear more clearly, that they could keep them longer in their memory, and that they tried to spell the names by mapping the sounds onto graphemes.

Exploring the type of phonetic errors made in spelling words at T1 it was first suggested that children predominantly used the initial e.g. Γ-ΓATA phonemes or syllables e.g. ΔE-ΔENTPO in their word spelling. Relative to class, it was suggested that children in class A did not have any cases of phonetic errors at T1, whereas in the other two classes there were very few cases. In class B 1 child made different types of errors e.g. 'letter/letter segments used'; 'initial syllable used'; 'both initial and final syllables used'; 'initial consonant used'; 'omission of phonemes/syllables'; 'addition of phonemes'. In class C there were 2 children who made phonetic errors; one child used the initial consonant phoneme and the other used in his/her first attempt the initial consonant and in the second both the initial and final syllable.

At T2, the phonetic errors increased, and again the predominant type of phonetic error was the use of the initial phonemes /syllables, the final phonemes /syllables or both. Additionally, as at T1, there were children at T2 who could spell words correctly but were just omitting some phonemes. It is worth illustrating that at T2, there were no observations of phonetic errors in class B. Nevertheless, in class C there were 7 cases of phonetic errors and in class A 4 cases. These results showed that gradually more and

more children tried to spell words, and the most predominant way of spelling was the phonetic.

8.5 Discussion

The results from the investigation into children's knowledge of spelling their names illustrated that there were children who had the ability to spell their names correctly upon entry into kindergarten, suggesting that they had acquired this knowledge at home. However, by the end of the year the number of children who were able to spell their names did not change remarkably. Riley (1996) has suggested that writing their names is one of the best predictors of reading. In U.K schools, children's spelling of their names, writing of alphabet letters, spelling of words, and their ability to distinguish between print and pictures in their work, are the criteria used in baseline assessment of early writing, which is part of the Baseline Assessment Scales (BAS). The purpose of the assessment, apart from the assessment of management in schools, is also to contribute different information about trends across cohorts or schools, and help teachers organise their literacy teaching (Nutbrown, 1999).

However, though the tasks that were applied in this study are related to the U.K baseline assessment, there is no baseline assessment in Greece, and children in kindergarten are not expected to know how to spell their names at entry into kindergarten, or to learn how to spell them by the end of the kindergarten year. The analysis in relation to class illustrated that at the beginning of the year, over 50% of the children in classes B and C already knew how to spell their names, whereas in class A less than 50% did not know. However, at the end of the year, although more children were found to know how to spell their names, there were still children who could not. According to teachers' reports regarding their practices, only teacher C said that one of her priorities was to teach children how to write their names by copying them. Neither teacher A nor teacher B reported that they explicitly taught children how to write their names. Additionally, teacher C said that at the beginning of the year there were children who knew how to spell their names. This report justifies children's performance at T1. Nevertheless, at the end of the year it would have been expected that all children in class C would know how to spell their names. However, the analysis indicated that overall only

one more child in class C learned how to spell his/her name from T1 to T2. This may also suggest that the instruction given may not have been so effective relative to learning to spell their names. Gender and age did not have any effect on children's performance.

Apart from exploring children's ability to spell their names, the present study further investigated their ability to spell names other than their own. From the investigation it emerged that at the beginning of kindergarten year, children could also spell names of family members or friends suggesting that this knowledge was acquired at home through their literacy encounters. The increase indicated after six months in kindergarten was not remarkable. This may mean that informal instruction that children received may not have initiated them into learning to spell other names. According to teachers' reports they all three did not include in their programmes the teaching of how to spell other names resulting in having no change by the end. Children in all three classes performed similarly. Once again, gender and age did not have any particular effect on children's ability to spell other names.

Children's performance on spelling was further investigated in terms of word spelling. The present study first explored the number of words that children attempted to spell, and the results showed that children's performance at T1 was too low. However, at the end there was a significant increase in children's scores. Nevertheless, their performance was still low. Clay (1993) also has investigated the number of words that children can write in order to assess how fast a child builds control over a basic writing vocabulary. As she suggested some children may write nothing and others may write a whole list of words. The score that comes up correlates well with other literacy measures and changes over time, and has good measurement qualities. She added that after that the teacher can investigate the way the children work in more traditional spelling tasks (Clay, 1993). In terms of class at the beginning of the year, all three classes scored similarly. However, at the end children in class C showed significant improvement and scored better than children in classes A and B. These findings suggest that the instruction the children in class C received may have had an effect on their performance. According to teacher C she applied tasks where children were required to write small sentences, and tasks where she dictated words to them. This may have contributed to developing their skills. However, it may also be that children's knowledge of the letter sounds affected

their performance. The analysis further found that there was neither gender nor age effect on their scores.

Secondly, children's performance on spelling was explored in terms of spelling words correctly. Again, children's scores were very low, both on their entry and at the end. Specifically, no children in class A could spell any words correctly, whereas just a few were above zero from classes B and C. Children started off with no differences between them. However, after spending six months in kindergarten, children in class C were found to do significantly better than the others. This shows that, as mentioned above, the instruction children in class C received may have helped them not only to develop their spelling skills but also to use orthographic rules in their spellings. Additionally, children's letter sound knowledge may have had an effect on their correct word spelling. This shows that, although Greek orthography is irregular, a few children at this early stage started using orthographic rules in their spellings. Unfortunately, children in classes A and B did not show any significant progress. Gender and age did not have any influence on children's performance.

Regarding the analysis made in relation to the errors in children's spelling, it was found that there were a lot of refusals to respond to all spelling tasks; thus the response rate was low. The most common types of errors made in spelling their names were the 'phonetic' and 'non phonetic'. Nevertheless, there were also cases of 'reversed' letters, which means that there were children who may have had good knowledge but had not made clear the right direction of the letter-forms, and of 'additions of phonemes', which means that the child heard more sounds when s/he was trying to spell. At the end of the year, again 'phonetic errors' were the most predominant, whereas the 'non-phonetic' became fewer. Relative to spelling other names, 'phonetic' errors were again the most common. However, at the end there were no examples of 'non-phonetic' errors or 'reversed' letters. In the word spelling task, 'phonetic errors' was the predominant type. Analysing the 'phonetic errors' made at the beginning it was suggested that children depended basically on the initial parts of a word in order to represent it. Gradually they started using the final parts of the target word or both initial and final in order to spell.

It is worth noting that the fact of having predominantly 'phonetic' errors in children's spellings fits with Gentry's (1982), Frith's (1985) and Ehri's (1986) description

of the early stages of spelling development. Specifically, they suggest that when children have reached the alphabetic (according to Frith) , or the phonetic (according to Ehri), stage are able to symbolise the entire sound structure of words. Thus, this does not refer only to the English language but also to Greek. Children appeared to be trying to map the sounds on to letters in order to represent the words. However, those who had received some instruction in word spelling were found to be doing better than those who were just mapping the sounds onto letters. The transparent Greek orthography may have also had an effect on the way children were trying to spell. Moreover, investigating children's performance on word reading and spelling found that children in class C made more mistakes in spelling than in reading, which shows what Mommers (1987) and Seymour and Porpodas (1980) suggested regarding children's mistakes comparing reading and spelling.

8.5.1 Conclusion

The conclusion drawn from the results of children's early spelling performance is that in name spelling tasks all three classes had similar results. Most of the children knew how to spell their names before entry into kindergarten. However, by the end there was a small number of them who did not. Further the analysis indicated that very few children knew how to write names other than their own. However, though by the end of the kindergarten year the number of those they knew increased, the difference was not remarkable. In the word spelling tasks the scores were very low at both times. However, there were children who could use orthographic rules and spell a few words correctly. In terms of class, all three classes were similar when they started off. Nevertheless, children in class C significantly improved and scored better than the others. The differences may have been due to the instruction they received in word spelling or to the good knowledge of letter sounds that children in class C had. Gender and age did not have any influence on children's performance on name and word spelling. The error analysis showed that the most common type of errors made was the 'phonetic'. The initial and final parts of a word were those on which children depended more in order to spell. It is worth indicating that the fact that children at this young age were making phonetic errors, and were using the initial and final phonemes, gives good reasons for suggesting that those children would have good progress once they begin formal literacy instruction in primary school.

CHAPTER 9: Correlational analysis

9.1 Purpose of the investigation

This chapter presents an exploratory analysis of the association between Greek children's performance on the precursors of reading (namely, the concepts about print, letter name knowledge, letter sound knowledge and phonological awareness), and their performance on early reading and spelling. Between the spelling measures, that of spelling words correctly was chosen to be used in the correlational analysis. The sample of the investigation was described in a previous chapter.

9.2 Results

9.2.1 Correlations between the precursors of reading at T1 and early reading and spelling at T1

Table 9.1: Pearson product-moment correlations between the precursors of reading at T1 and between them and early reading and spelling at T1

	Concepts About Print T1 (CAP)	Letter Name Knowledge T1 (LNK)	Letter Sound Knowledge T1 (LSK)	Phonological Awareness T1 (PA)
Reading T1	.096	.031	.628**	.228
Spelling T1	-.050	.223	.134	.158
CAP T1	1	.053	.117	.205
LNK T1	.053	1	.019	.172
LSK T1	.117	.019	1	.173
PA T1	.205	.172	.173	1

* $p < .05$, ** $p < .01$

Table 9.1 shows the correlation coefficients that emerged from the analysis of the relationship between the children's performance on the precursors of reading (i.e. concepts about print, letter name knowledge, letter sound knowledge, and phonological awareness) on entry into kindergarten, and on early reading and spelling at the beginning of the kindergarten year, as well as the relationship between the precursors upon children's entry into kindergarten. The relationships were investigated using Pearson

product moment correlation coefficient. Firstly, the correlation analysis showed that children’s letter sound knowledge was found to be strongly and positively correlated with their reading at T1 ($r = .628$, $n = 54$, $p = .000$). According to Cohen (1988), a value of correlation coefficient from $\pm .10$ to $.29$ indicates a small relationship; from $\pm .30$ to $.49$ a medium relationship; and from $\pm .50$ to 1.0 a large relationship. Children’s performance on phonological awareness, letter name knowledge and concepts about print at the beginning of the year did not appear to correlate with either any other precursor of reading or with reading and spelling performance. Also, spelling did not correlate with any of the precursors or reading at the beginning of the year.

What emerged from the analysis was that upon entry into kindergarten, children’s level of knowledge of letter sounds and their skills in mapping the letters on to sounds were related to their word reading, showing that those children with good letter sound knowledge were also good readers. However, it is not possible from the present analysis to say whether letter sound knowledge facilitates reading or the other way round.

9.2.2 Correlations between the precursors of reading at T2 and early reading and spelling at T2

Table 9.2: Pearson product-moment correlations between the precursors of reading at T2 and early reading and spelling at T2

	Concepts About Print T2 (CAP)	Letter Name Knowledge T2 (LNK)	Letter Sound Knowledge T2 (LSK)	Phonological Awareness T2 (PA)
Reading T2	.278*	.064	.718**	.307*
Spelling T2	.279*	.019	.574**	.268*
CAP T2	1	.131	.507**	.237
LNK T2	.131	1	.245	.266
LSK T2	.507**	.245	1	.369**
PA T2	.237	.266	.369**	1

* $p < .05$, ** $p < .01$

Table 9.2 shows the correlation coefficients that emerged from the analysis of the relationship between children’s performance on the precursors of reading (i.e. concepts

about print, letter name knowledge, letter sound knowledge and phonological awareness), and early reading and spelling at the end of the kindergarten year, as well as the relationship between the precursors at the end of the year. The analysis indicated that children's knowledge of letter sounds was highly correlated with both early reading ($r = .718, p = .000$) and spelling words correctly ($r = .574, p = .000$), with concepts about print ($r = .507, p = .000$) and with phonological awareness ($r = .369, p = .006$) at the end of the year. Children's letter name knowledge did not correlate with either early reading and spelling or any other precursor at the end of the year.

These findings suggest that at the end of the year children's letter sound knowledge appeared to relate to reading, to spelling words correctly and to the other precursors but letter name knowledge. The last finding has resulted from the fact that in the Greek alphabet, eight letters out of the twenty-four have names which have a CV (consonant-vowel) construction, where the consonant is the sound of the letter e.g. M= mi or P= rho. One letter has a name which has a CVC (consonant-vowel-consonant) construction, where the initial consonant is the sound of the letter e.g. T= taf. One letter has a name which has a VCV (vowel-consonant-vowel) construction, where the initial vowel is the sound of the letter e.g. H= eta. The remaining 14 letters have polysyllabic names e.g. Σ = sigma or O = omicron, although the initial phoneme of the name is the sound of the letter. These letters include all vowel letters except from H= eta that was mentioned above. Thus, this finding may be that children were focusing on the sound rather than the name and that these two bits of knowledge were not being connected. Also, it may be that generally, unlike English, Greek letter names are complex. The analysis further showed that similarly to T1, children's letter sound knowledge was highly related to their reading at T2. However, in contrast to T1, children's knowledge of the sounds also correlated with their skills in spelling words correctly.

The exploration of children's phonological awareness, and its relationship with the other precursors of reading, and early reading and spelling, illustrated that there was a medium correlation with reading at T2 ($r = .307, p = .024$), a small correlation with spelling words correctly ($r = .268, p = .05$), and, as mentioned above, a medium correlation with letter sound knowledge. These findings first illustrate that, although at the beginning of the year phonological awareness was not related to reading and spelling, or to any of

the precursors, by the end it was found to be significantly associated with reading and correct word spelling. Thus, the results indicated that children’s skills in phoneme manipulation were related to their reading and spelling performance in a similar way to letter sound knowledge. This suggestion was further supported by the fact that an association was found between phonological awareness and letter sound knowledge at the end of the year. These findings show that those children who had good phonological awareness skills were also good readers and good spellers but the data from the present analysis cannot specify whether phonological awareness had a facilitatory effect on reading and spelling or the other way round. Additionally, the association between phonological awareness and letter sound knowledge may have been due to the fact that PA was assessed at phoneme level.

Regarding the other precursors of reading, and specifically the concepts about print, the analysis at T2 indicated that there was a small positive correlation with reading ($r = .278, p = .042$) and a small correlation with spelling words correctly ($r = .279, p = .041$).

9.2.3 Correlations between children’s performance on reading and spelling at T1 and T2

Table 9.3: Pearson product-moment correlations between reading and spelling at T1 and T2

	Reading T2	Spelling T2
Reading T1	.736**	.620**
Spelling T1	.077	.389**

* $p < .05$, ** $p < .01$

Table 9.3 shows the correlation coefficients that emerged from the analysis of the relationship between reading and spelling at T1 and T2. The results of the analysis indicated that there was a high correlation between reading at T1 and T2 ($r = .736, p = .000$), a high correlation between reading at T1 and spelling words correctly at T2 ($r = .620, p = .000$) and a medium correlation between spelling words correctly at T1 and T2 ($r = .389, p = .004$). However, spelling at T1 did not appear to relate to reading at T2.

These findings suggest that children’s reading performance at the beginning was strongly related to reading and spelling at the end of the year. On the other hand, spelling at T1, though it was strongly associated with spelling at T2, did not relate to reading at T2.

9.2.4 Correlations between children’s performance on the precursors of reading at T1 and early reading and spelling at T2

Table 9.4: Pearson product-moment correlations between the precursors of reading at T1 and reading and spelling at T2

	Reading T2	Spelling T2
Concepts AboutPrint T1	.106	.002
Letter Name Knowledge T1	.065	.083
Letter Sound Knowledge T1	.637**	.465**
Phonological Awareness T1	.303*	.341*

* $p < .05$, ** $p < .01$

Table 9.4 shows the correlation coefficients that emerged from the analysis of the relationship between children’s performance on the precursors of reading (i.e. concepts about print, letter name knowledge, letter sound knowledge and phonological awareness) on their entry into kindergarten, and their performance on early reading and spelling at the end of the kindergarten year. The relationships were investigated using Pearson product moment correlation coefficient. Regarding concepts about print, the analysis showed that there was no correlation between children’s performance on CAP at T1 and on reading and spelling at T2, indicating that there was no relation between them.

Further the investigation showed that there was no correlation between children’s scores on letter name knowledge on entry into kindergarten and their performance on reading and spelling at T2. By contrast, exploring the relationship between children’s letter sound knowledge at T1 and their scores on reading and spelling by the end the kindergarten year, the analysis indicated that there was a high correlation between them ($r = .637$, $p = .000$) and ($r = .465$, $p = .000$) respectively. These results indicated that children’s knowledge of letter sounds at the beginning of the year was associated with their reading and spelling performance by the end of the year. Though the correlational

analysis cannot infer any causal relations, it is possible to consider that knowledge of letter sounds may have a facilitatory effect on later reading and spelling.

Analysing further the relationship between letter sound knowledge and children's early reading and spelling, the coefficient of determination was explored in order to investigate the practical significance of the relation between letter sound knowledge and reading and spelling. The results indicated that specifically letter sound knowledge at T1 helps to explain nearly 40.57% of the variance in children's scores on reading at T2, whereas in respect of children's spelling words correctly, their letter sound knowledge explains 21.62% of the variance in their scores.

Similar to the results on letter sound knowledge were those on phonological awareness. The analysis showed that there was a medium correlation with reading ($r = .303$, $p = .026$) and spelling ($r = .341$, $p = .012$) at T2. Again the correlational analysis does not enable any inferences to be made regarding any causal connection between phonological awareness and later reading and spelling but it may be considered.

Investigating further the practical significance of the association between phonological awareness and early reading and spelling it was found that only 9.18% of the variance in children's scores regarding reading is explained by phonological awareness upon entry into kindergarten. However, in relation to spelling words correctly, phonological awareness explains 11.62 of the variance in children's scores.

9.3 Discussion

The results of the correlational analysis between children's performance on the precursors of reading (i.e. phonological awareness, letter name knowledge, letter sound knowledge and concepts about print) and their performance on reading and spelling as well as between children's performance on these precursors, illustrated that at the beginning of the year, children's knowledge of concepts about print and of letter names, and their skills in phonological awareness did not appear to correlate with the other precursors, or with reading and spelling. However, letter sound knowledge appeared to have significant association with reading at the beginning of the year. These findings

suggest that those children who had good knowledge of the letter sounds were also good readers.

At the end of the year, letter sound knowledge also was associated with all the precursors of reading, except from the letter name knowledge, and both reading and spelling. Regarding the finding on letter name knowledge, it may be that Greek letter names, unlike English, are complex, because most letters have polysyllabic names or that children were focusing on the sounds rather than the names and that these two bits of knowledge were not being connected. The results of the correlational analysis between the precursors of reading and early reading and spelling are consonant with the results occurring from studies on the English language and indicate that the role of letter sound knowledge is not language specific, but applies to all alphabetic scripts (e.g. Liberman, 1971; Fox and Routh, 1975; Ferreiro and Teberosky, 1982; Mann and Liberman, 1984; Backman et al., 1984; Ehri and Wilce, 1985; Bradley and Bryant, 1986; Stanovich, 1986; Stuart and Coltheart, 1988; Adams, 1990; Bialystok, 1991; Treiman, 1994; Riley, 1996; Watson, 1998; Stuart, 1999).

Relative to children's phonological awareness, it was found that, similarly to letter sound knowledge, PA, although it did not relate to any of the other measures at T1, was associated with reading and spelling at the end of the year. This finding supports the results of the English studies regarding the relation between phonological awareness and reading and spelling (e.g. Morais et al., 1979; Lundberg et al., 1980; Mann and Liberman, 1984; Bradley and Bryant, 1983, 1985; Content et al., 1986; Read et al., 1986; Lundberg et al., 1988; Stuart and Coltheart, 1988; Cunningham, 1990; Goswami and Bryant, 1990; Byrne and Fielding-Barnsley, 1995; McBride-Chang, 1995; Goswami, 1999; Stainthorp and Hughes, 1999). Porpodas (1992), in his study with Greek 1st and 2nd graders, found that children's PA is related to the level of their literacy attainment, which also shows that the relation between the two is universal rather than language specific.

The association between phonological awareness and letter sound knowledge at the end of the year gives further evidence that the good level of letter sound knowledge relates to reading and spelling. It may be that the PA is achieved in the present study by the development of knowledge of the letters sounds. This suggestion may relate to the findings of the study by MacMillan (2002), where it was indicated that a child must have

some letter sound knowledge in order to perform phoneme or rhyme tasks. Also, children's knowledge of concepts about print significantly correlated with early reading, spelling and letter sound knowledge at the end of the year. This finding regarding the association between CAP and reading is consonant with the findings of Riley's (1996) study, where, though CAP was not a strong predictor of reading, it had a positive relationship both at the beginning and the end of the year. Gavel (1958), Wells and Raban (1978), Day and Day (1978), and John (1980) have pointed out the high correlation between CAP and reading, and the fact that good knowledge of CAP appears to result in good performance on reading. Ehri (1979) has further suggested that awareness of CAP may interact with reading both as a consequence and as a cause of further progress in reading.

The exploration of the relationship between reading at T1 and reading and spelling at T2 illustrated that children's reading performance at the beginning of the year was associated with their reading and spelling performance at the end of the year. The 'role' of reading in the present study supports the suggestion by Frith (1985) that reading is the pacemaker, and is present even when the spelling skill has not yet reached its basic form. The association between reading and spelling is also suggested by several studies (Malmquist; 1958; Ehri and Wilce, 1987b). Relative to the association between reading and spelling, Ehri (1980, 1997) and Gough et al (1992) have suggested that this relationship is due to the similarities between the processes underlying reading and spelling. The fact that there was an association between children's performance on reading at T1 and T2 and between spelling at T1 and T2 is related to what Stanovich (1986) has illustrated in his theory on 'Matthew effects', which supports that further learning is facilitated by prior knowledge, enriched and elaborated. 'A child with more expertise has a larger knowledge base, which allows him/her to acquire greater expertise at a faster rate' (p.381). The analysis further found that, though there was significant association between spelling at T1 and T2, spelling at T1 was not associated with reading at T2, which means that, though the reverse appeared to be an important association, this relationship does not seem to have any value. This contradicts what Morris and Perney (1984) found in their study about the correlation between first graders' invented spellings at the beginning of the year and their reading at the end of it.

The investigation of the relationship between the precursors of reading at T1 and children's performance on reading and spelling at T2 showed that only phonological awareness and letter sound knowledge were found to correlate with reading and spelling. Though phonological awareness was not associated with reading and spelling at the beginning of the year, at the end of the year it was found that there was significant association between phonological awareness and reading and spelling.

The characteristics of the data set and the number of the participants precluded an investigation using multiple regression analysis (Pallant, 2001). However, the pattern of the data overall suggests that the observed relationship of phonological awareness and of letter sound knowledge to reading and spelling in English also held for Greek. There was a more complex association between alphabet knowledge and reading and spelling, possibly because of the complexity of the letter names in Greek. It might also have been influenced by the equivocal approach taken by the teacher in relation to the new curriculum. This will be discussed in discussion chapter.

CHAPTER 10: Child interviews

Children's encounters with print and their importance for the development of the children's literacy skills has been indicated in the Literature Review chapter.

10.1 Procedure

Children's responses to the interview questionnaire were transcribed and analysed. The transcription was made by listening to the recorded interviews, translating them into English and typing them up. The analysis was made both quantitatively and qualitatively. The first step of the analysis was to divide the transcriptions into classes. Then children's responses that could be analysed quantitatively ('yes' or 'no') were coded and put in tables. The responses to the questions that were not just a 'yes' or 'no' but described their preferences (e.g. funny stories or informative) or a person (e.g. mum), a place (e.g. school) were summarised and put in tables, without quantitative analysis. Additionally, children's responses that described their views and experiences were summarised and reported, citing also the children's sayings. An example of this analysis is given in Appendix 11. The next step of the analysis was to explore children's views on and experiences of literacy and to connect these data with children's performance on literacy tasks.

10.2 Results

Questioning children regarding whether they enjoy reading printed materials all fifty-four responded positively. Table 10.1 below illustrates which printed materials they enjoyed and the reasons why.

Table 10.1: Children's preferences on printed materials and their reasoning

	Kind	Reason	Favourite
Class A	Fairytales	Funny, Informative, Impressed by fantasy worlds, Love animals, Enjoy pictures	Three Little Pigs Cinderella Little Red Riding Hood Snow White Lion King
	Books (history)	Enjoy Greek history/mythology	

Class B	Fairytales	Funny	Three Little Pigs Little Red Riding Hood Little Mermaid
	Books with animals and nature	Informative, Love animals	
	Comics	Love adventure	Superman, Tarzan, Mickey the Mouse
Class C	Fairytales	Funny, Love animals, Impressed by fantasy worlds	Cinderella, Peter Pan Three Little Pigs Snow White
	Books (history)	Enjoy Greek history/mythology	The Golden Age of Pericles The Labours of Hercules
	Books (animals)	Informative	Interest about animals' life

Their responses suggest that children are impressed by fictional characters and fantasy worlds. Nevertheless, there were children who were interested in learning more about nature and history.

In terms of investigating children's home literacy as well as stimuli to reading and writing, their reading experiences at home were explored. Table 10.2 shows that

Table 10.2: Children's reading experiences at home and who is involved

	Read stories		By whom	Read bedtime stories		Favourite bedtime stories
	Yes	No		Yes	No	
Class A	15	3	Parents, older siblings, grandparents, nannies	15	3	Favourite fairytales
Class B	15	1	Parents, older siblings, grandparents	15	1	Favourite fairytales
Class C	17	3	Parents, older siblings, grandparents	14	6	Favourite fairytales

the majority of children were read to at home. According to children, it was their mothers who predominantly read to them, because she was spending more time with them. To the question of whether they read them stories from the books or narrated them the children's responses varied and showed that there was no difference between the two ways. It further emerged that all of them had plenty of children's books at home, that they had access to, indicating a rich print home environment. To the question of whether they had any siblings 45 children (A: 14, B: 12, C: 19) reported that they had siblings. From those children, 25 had older siblings who already knew how to read. Related to the literacy stimuli that children had at home are their reports of parental literacy behaviour, which are presented in Table 10.3.

From children's responses it was evident that they had a lot of experiences of seeing their parents reading, which suggests that they had examples of and stimuli from reading at home. All three classes did not appear to differ in their experiences. Children's views on the reasons why their parents read illustrate the way they conceptualise the meaning of reading. Children believed that learning, enjoyment and information are some of the reasons why adults read. It was actually said by one of them that reading is an adult characteristic, implying probably the difference between young children and adults:

'My mum likes reading books for adults, because she likes reading [...]'; 'She learns a lot of new things by reading the magazine'; 'She reads the TV guide, because she wants to know what films are on'; 'She likes looking at the pictures'; ' She reads only books about tennis, because it's her job'; '[..] because she is an adult'; 'He reads magazines for cars, because he wants to buy a new one'; 'From the newspaper he learns what is happening around the world'; ' By reading the newspaper my dad learned how to read'; 'He reads newspapers and magazines, because he wants to know about the war and the stock market'; ' My father is a teacher and he reads books to teach reading to his pupils'

Table 10.3: Children’s reports of parental literacy behaviour and their reasoning

Mother Reading			Kind of printed material	Children’s Reasoning
	Yes	No		
Class A	16	2	Magazines, cookery books, Fiction books, newspapers, books about their work (e.g. education, law, etc.), TV guide	Like looking at the pictures/photos, enjoy themselves, learn new things enjoy reading
Class B	13	3	Magazines, TV guide, newspapers, fiction books, books about their work (e.g. sports science etc.)	Enjoy reading, learn the news, learn new things on their work, enjoy reading, learn about the films on TV
Class C	20	0	Magazines, newspapers, fiction books,	Like looking at the pictures/photos, learn the news, she is an adult, learn new things
Father Reading			Kind of printed material	Children’s Reasoning
	Yes	No		
Class A	10	8	Newspapers, books about their work (e.g. mechanics, law, aviation, accounting etc.), magazines e.g. about cars	Learn the news, learn new things on their work, enjoy rifling through their pages
Class B	12	4	Newspapers, magazines e.g. about sports and cars, books about their work (e.g. school books)	Buy new things e.g. car, learn what is happening around the world, learn how to read, learn about the war and the stock market, learn how to teach his pupils how to read
Class C	19	1	Newspapers, magazines, books about their work	Learn the news, learn new things about their work, enjoy themselves after hard work

However, in terms of investigating children’s literacy experiences of reading and writing, it was important to explore children’s school environment, their views on teacher/s initiating story telling or other activities, and their responses (Table 10.4). Those children who did not enjoy their teacher reading them stories suggested that the reason why was basically because they did not like the story, they felt like playing other games, or because they wanted to deal with something else (e.g. drawing with crayons or playing with dough).

Table 10.4: Children’s reports on their literacy experiences at school and their views on teacher’s initiating story telling

	Teacher reads to them		Enjoy		Kind of printed material	Children’s reasoning why the teacher reads to them
	Yes	No	Yes	No		
Class A	18	0	15	3	Famous fairytales, fairytales that teach them morals, books with historic events, funny stories, religious stories	Love listening to stories, teach them new things or how to behave properly, teach them history and religion
Class B	16	0	10	6	Famous fairytales, books with historic events, books about religion	Teach new things, teach morals, make them laugh, teach them reading, enjoy listening to stories
Class C	20	0	17	3	Famous fairytales, stories that teach them morals, religious stories, stories with animals and nature, adventurous stories	Teach new things, teach children reading, make them laugh, discipline them, teach them how to tell stories, enjoy listening to stories

According to children’s responses, there were many similarities between the stories read by the three teachers and the way children understood the reasons why their teachers were telling them stories. Their reasoning for these was similar to the reasons they gave for why their parents were reading. According to children’s reports, all three teachers included storytelling in their programmes. Additionally, in all three classrooms, the library corner had plenty of books where children could take books and look at their pages, pretending that they were reading.

To the question ‘why do people learn how to read’ children were found to have already understood that reading is a means of taking the message that print conveys, of communication between people, of learning, entertainment, and information. Moreover, some children also pointed out the social functions of reading, such as how important it is in getting one employed and earning his/her living or that reading distinguishes people from animals.

'[...] because otherwise they will not be able to learn what is written in the books'; '[...] because they have to do their homework'; 'if someone does not know how to read the others will make tease him'; 'to help other children who cannot read'; 'to read stories to little children'; 'to learn the news around the world'; 'to learn about new things e.g. when someone is ill, when he knows how to read he will be able to read in a book or in a magazine what he should do'; 'to read the letters and understand what the book says'; 'to earn our food'; 'to find a job'; '[...] because we need to know the letters in order to study our lessons'; '[...] to grow up'; '[...] if the postman delivers us a letter, we will be able to know whether it is for us or for somebody else'; '[...] to read signs and labels'; '[...] because they like reading'; '[...] because we are humans'; '[...] so that we can read the books and fairytales'

Regarding their opinion about where people learn how to read, children of classes A and B predominantly responded at home from their parents, in contrast to the majority of children in class C, who said in kindergarten. However, there were also some children who said that people learn to read from newspapers, books, TV, God. Children's responses suggest that the predominant literacy experiences that those children had were from the home environment and they had not yet understood the role of school. Nevertheless, the majority of them expressed the view that they could not read because they were very young. This indicates that children felt that only older children could learn how to read. The evidence from children's performance on literacy tasks showed that except for a few children the vast majority did not know how to read, reaffirming what they reported.

Regarding the purpose of writing, children's views were similar to those of reading. They pointed out its social aspect, such as how important writing is in order to socialise with other people, to work, to communicate, to learn, and above all is a characteristic that distinguishes humans from animals. Additionally, two children said that not knowing how to write could be a reason for the others to tease him. There was also a similar response regarding reading mentioned above. This indicates that they already knew that illiteracy is one of the reasons for having social discrimination amongst people. Moreover, they believed that writing, like reading, was exclusive to adults.

Another suggestion that could be made is that children had already an understanding of literacy, of the purposes of written language. This concept is on the top of the hierarchy of the concepts to be acquired by children on the path of becoming literate. Additionally, it is worth pointing out that some children stressed the relation between reading and writing.

'[...] people need to learn how to write because they have to do their homework'; 'because we are humans and not animals'; 'to read to their children'; 'to learn to speak; 'to send letters to our friends'; 'to find a job'; 'to write our names and surnames'; 'to play with the computer'; 'to write words and the invitations for our parties'; 'because people are grown up'; 'to teach writing to their children'; '[...] because when we love somebody we might want to write to him'; '[...] to know how to write words'; 'because they like writing'; 'in order to be able to read fairytales; some people who are poor write them and some others who are rich buy them and read them to their children'; '[...] if we know how to write then we will know how to read and we will be able to read all the news about our country'; 'if we know how to write we can ask for presents from Santa Claus'; '[.] if we don't how to write then the other children will tease us'; '[.] just in case someone asks us to write something. Otherwise we will be humiliated'; 'if one knows writing and what is happening around the world, he can write the news to inform other people'

The majority of children in class A thought that people learn how to write from their parents, or other adults at home. On the contrary, the vast majority of children in classes B and C supported the idea that people learn writing at school from their teachers, when they get older. However, children in class B had different views regarding where learning of reading and writing takes place. According to them one learns how to write at school and how to read at home. This is maybe because, according to their reports, they considered writing more difficult than reading. Since writing was harder for them to achieve, they may have believed that they should learn how to write when they get older and go to primary school.

Tables 10.5, 10.6, 10.7, 10.8, 10.9 show children's practical experiences of reading and writing upon entry into kindergarten. It is indicated by children's responses

that they had a lot of literacy experiences from their home, and that their parents and other family members dealt with children’s literacy, helping them to either read or write something, or even showing them how to write their names, alphabet letters, and words.

Siblings appeared to have an effect on young children’s encounters with literacy, suggesting that those children who had older siblings who knew how to read and write may have had more literacy experiences than those who did not. Additionally, in relation to who helped children when they tried to read, children in classes B and C said their mothers. This indicates that mothers are predominantly those who deal most with their children’s literacy acquisition. As mentioned above, this may be due to mothers’ spending more time with children at home whether they work or not. In terms of class the investigation of children’s responses showed that overall there was no difference between them regarding their experiences of literacy. Nevertheless, in relation to writing, children in class C were found to have tried to write something more than the others.

Table 10.5: Children’s responses to whether they had tried to read and whether they had any help and by whom at T1

	Tried to read		Help		By whom
	Yes	No	Yes	No	
Class A	15	3	7	8	Parents
Class B	11	5	3	8	Mother
Class C	11	9	11	0	Mother

Table 10.6: Children’s responses to whether they had tried to write and whether they had any help and by whom at T1

	Tried to write		Help		By whom
	Yes	No	Yes	No	
Class A	5	13	0	5	Parents, siblings, grandparents
Class B	4	12	2	2	Parents, siblings
Class C	14	6	4	10	Siblings, grandmothers

Table 10.7: Children's responses to whether they knew how write any alphabet letters at T1

	Know how to write letters		Taught by whom
	Yes	No	
Class A	14	4	Parents, siblings, grandparents, computer
Class B	14	2	Parents, grandparents, computer
Class C	15	5	Parents, grandparents

Table 10.8: Children's responses to whether they knew how to write their names at T1

	Know how to write their names		Taught by whom
	Yes	No	
Class A	15	3	Parents
Class B	13	3	Parents
Class C	20	0	Parents, teacher

Table 10.9: Children's responses to whether they knew how to write any words at T1

	Know how to write words		Taught by whom
	Yes	No	
Class A	11	7	Parents, siblings, computer
Class B	8	8	Parents, siblings
Class C	8	12	Parents

This indicates that these children may have been expected to perform better than the others in the spelling tasks. The empirical data indicated that, though at the beginning there was no difference between classes, by the end class C did better than the others in word spelling. Children further mentioned in their reports that writing was confined basically to copying words and names. Many of them reported that they had learnt writing their names by copying the labels on the drawers within school, and some words by copying them from signs, labels, books and posters. According to teachers' reports the task of copying words and their names was the prevalent writing task in teachers' teaching plans. The data from children's performance showed that upon entry more

children in class C knew how to write their names than in classes A and B. However, at the end there was no difference between the classes. Nevertheless, the number of children who reported that they knew how to write their names was not verified by the results of the empirical analysis. Similar to the results on spelling their own names were those on word spelling, where children's scores did not reaffirm their reports. Additionally, some children said that they learned how to write alphabet letters and words from their toy computers. At the end of the kindergarten year children were interviewed again about their views on dealing with reading and writing and Table 10.10 illustrates their responses.

Table 10.10: Children's responses to dealing with reading and writing at the end of the year

	Enjoy reading		Know how to read		Enjoy writing		Know how to write		Which is harder for them	
	Yes	No	Yes	No	Yes	No	Yes	No	Reading	Writing
Class A	17	1	2	16	18	0	18	0	14	4
Class B	13	3	4	12	15	1	15	1	15	1
Class C	19	1	12	8	20	0	20	0	17	3

The majority of children appeared to enjoy reading very much, though over 50% of them reported that they did not know how to read. When children were asked whether they enjoyed reading they showed clear evidence of early reading behaviour. According to what they reported it was indicated that they knew how to behave like readers and this was shown by the way they handled books; they pretended to read, and they told stories in relation to the pictures in the books. This evidence provides an insight into the knowledge that children have about books. This is an important concept about print and it is included in Clay's (1989) CAP test. Most of those children who did not know how to read were of the view that they should learn reading, but when they are older and more mature. It is interesting that, according to their reports, they had realised the necessity of knowing the sounds in order to read and because they did not, this made reading harder for them than writing.

'Reading is hard when I don't know some letters and their sounds'; 'Reading is hard, because when I don't know the first letter of a word I cannot continue'; 'Reading is

difficult, because you need effort to find the right sounds in order to read the words correctly'; 'I can't think of the letters and it's tiring trying to read them'; 'Reading because I don't know all the sounds and I can't blend them'

In writing, in contrast to reading, children do not feel the necessity to conform to any rules. They may invent spellings that are meaningful to them. The fact that writing appears to be easier for them makes it even more enjoyable than reading. With the exception of one, all the children suggested that they knew how to write, which suggests that children feel they can write without following any conventional rules. However, trying to read without following the conventional rules does not make any sense. The reason that those children who indicated that they had some difficulty in writing may have been because their dexterity was not yet developed, and they could not write some lowercase letters, such as ω (omega), ξ (ksi), ζ(zita), etc. Some others said they found it difficult to know from where to start.

'[...] it's tiring writing letters and especially the small ones, which are difficult'; 'Writing because some letters are hard to write'; 'Writing is more difficult because I don't know from where to start writing'; 'Writing because I can't form the letters very well, especially the lower case, and I get sad'; 'My hand cannot write very well'

Thus, directionality of writing and formation of lowercase letters are some of the reasons that make writing appear hard to kindergarteners. However, further inferences can be made regarding the relation between children's familiarity with reading and writing and their practical experiences of them, and how hard or easy they are for kindergarteners. In comparison with the beginning of the study children appeared to have changed their views regarding whether reading or writing was harder for them. Though upon entry reading was easier for them than writing at the end of the study it was the opposite. The reason may have been that children may have realised that reading was not just riffling through the pages and making up their own stories but a process where they needed to have knowledge of the prerequisites of literacy e.g. the letter sounds etc. The empirical data verify children in class C's reports, whereas in case of classes A and B the analysis of the data showed that more children could read more than one word than those who were reported in Table 10.10. Relative to writing, the empirical data illustrated that fewer children than those reported in Table 10.10 were found to know how to write.

When children were asked what would be the first word or phrase they would write if they knew how to write, many of them indicated words such as ‘mum’ and ‘dad’ because they wanted to express their loving feelings to their parents. Others said their names, family names or friends’ names; alphabet letters; names of animals like ‘elephant’, ‘cat’, ‘dog’, ‘fish’, ‘donkey’, etc. because they love animals or they are their favourite animals; words like ‘flowers’, because they are very beautiful and colourful; and words of things they eat, such as ‘apple’. However, there were children who could not think of what they would write. To the question what would be the first printed material they would read, if they knew how, children predominantly suggested their favourite fairytales. However, some children also mentioned books, newspapers and magazines, because they had seen their parents reading them.

Table 10.11 indicates children’s views on their teacher’s early literacy teaching at the end of the kindergarten year. From their responses it emerged that, with a few exceptions, teachers in terms of their literacy teaching plans taught children both letter names and sounds. Relative to reading, over 50% of the children reported that they had not been taught how to read words by their teachers. The fact that there was difference of opinion regarding whether they were taught how to read words or not may be because each child conceptualised learning to read in a different way. In terms of class, there were more children in class C who reported that they were being taught reading in kindergarten than in classes A and B. According to teachers’ reports only teacher C applied tasks of decoding in terms of their teaching plans, whereas teachers A and B focused on teaching children how to visually identify some words and on children building up a sight vocabulary.

In contrast to reading, the majority of children said that they were taught how to write. Some of the reasons children stated regarding why the teacher taught them reading and writing were their preparation for primary school, the reading of books, the writing of words and to find a job and earn a living. In terms of class, there were more children in class C who said that they were being taught writing in kindergarten than in class B. Specifically regarding teachers’ teaching plans on writing, children reported that they were copying words and phrases or they were allowed to invent their own spellings. However, teacher C reported that she dictated words and small sentences for children to

write down. Those children who reported that their teachers did not teach them how to read and write during their time in kindergarten justified their responses by saying that it may have been because they were too young to acquire literacy. The fact that in class C there were children who reported that they had not been taught how to read and write may indicate that those children may have not realised that they had been learning literacy in kindergarten. A large number of them were also of the view that they would learn literacy when they go to primary school. The fact that children did not have any experience of what is being done in primary school suggests that what they say may reflect their parents' views regarding the time at which children acquire literacy.

Table 10.11: Children's reports on whether the teacher taught them the letter names and sounds, how to read and write words and their reasoning

	Teach letter names		Teach letter sounds		Teach how to read words		Teach how to write words		Children's Reasoning
	Yes	No	Yes	No	Yes	No	Yes	No	
Class A	17	1	17	1	3	15	13	5	Prepare them for primary school, teach them reading and writing, find a job and earn their living
Class B	15	1	15	1	4	12	8	8	Prepare them for primary school, to be able to answer questions
Class C	17	3	17	3	13	7	18	2	Prepare them for primary, read words and books, write words

However, all children who said that their teacher had not taught them how to read and write words reported that they would like to learn literacy during their time in kindergarten and justified their responses (Table 10.12). Some of the reasons they reported were that they thought they were old enough to learn reading and writing; they would get prepared for primary school; and they would communicate through reading and writing with the others.

Table 10.12: Children who said that they had not learnt to read and write words in kindergarten report their views on learning to read and write words at T2

	Would you like to learn how to read words		Children's Reasoning	Would you like to learn to write words		Children's Reasoning
	Yes	No		Yes	No	
Class A	15	-	Read their favourite fairytales, read to their baby siblings	5	-	Write their name, write cards and letters to their friends
Class B	12	-	Old enough to learn reading, read their favourite fairytales on their own or to their family members, want to know reading before primary school, enjoy reading	8	-	Enjoy writing, write messages and letters to their friends, and the invitations for their parties
Class C	7	-	Old enough to learn reading, learning reading before primary will make it easier for them, read fairytales, help them study	2	-	Write shopping lists, write cards to their friends, write letters to their grandparents

From their responses it is evident that they had the urge to acquire literacy and they understood the purposes of learning reading and writing and how important it is in one's life. Even though a lot of children had not yet developed much their literacy-related skills, they had understood the importance of literacy and the purposes of written language, which, in turn, indicates the significance of their literacy experiences acquired so far at home and in kindergarten and their influence on the children's literacy

development later on. Investigating further children’s literacy learning in kindergarten, children were asked to describe the literacy games that each teacher used in terms of her literacy teaching plan and their views on them. Table 10.13 illustrates children’s reports on the literacy games their teachers used.

Table 10.13: Children’s reports on the literacy tasks applied by their teacher

	Tasks
Class A	Teacher A writes words on the blackboard and she reads them; ask children to identify specific graphemes within a short passage; to find words that start with each sound of the alphabet; to recite the alphabet letter and their sounds; to write some letters in upper case; to identify in written words the initial letter and say the name and the sound
Class B	Teacher B writes words and breaks them into syllables, and then ask children to count them; to try to guess which is the missing word; to recite the alphabet; to read words that are written on the blackboard; to find words that start with each sound of the alphabet
Class C	Teacher C writes words down and asks children to break them into syllables and read them syllable by syllable; asks children to find words that start with each sound; she writes words down, and then she asks them to read the words. She gives them cards with syllables and asks them to form words; to recite the alphabet and its sounds; to find the opposites; to copy words from the blackboard. She shows them cards with words and asks them to read the words; to form syllables with phonemes; to play games with their names

Describing the tasks was not very easy for young children. The fact that they could recall the tasks and they were very descriptive indicates that they understood when the process of literacy learning was taking place. As suggested by children’s reports, all three teachers were applying tasks that aimed to develop children’s knowledge of the names and the sounds of the letters and their general letter knowledge. However, in terms of class, according to children’s reports teachers B and C applied tasks on phonological awareness, whereas teacher A did not. Moreover, based on what children said, teacher C appeared to employ tasks where children were required to read, which means that she focused on developing their reading skills. These findings verify what emerged from the

empirical investigation of children’s performance on letter knowledge and phonological awareness tasks, and on reading, and also what the teachers reported on what they applied in their literacy programmes.

Table 10.14: Children’s reports on whether or not what the teacher taught them in kindergarten regarding literacy (e.g. letter names and sounds, word and name reading and spelling) was known to them before their entry; their views on literacy learning in kindergarten

	Known to them		Enjoy taking part		Ask help from the teacher		Where it is better to learn literacy	
	Yes	No	Yes	No	Yes	No	Primary	Kindergarten
Class A	6	12	16	2	7	11	13	5
Class B	9	7	16	0	8	8	10	6
Class C	12	8	20	0	17	3	12	8

Regarding their views on literacy learning in kindergarten (Table 10.14), the vast majority of children enjoyed taking part into literacy games. Some of the reasons they gave were:

‘ [...] because I like playing with letters and words’; ‘[...] because you learn more new letters, you make new words’; ‘[...] saying the alphabet it’s funny, because it sounds like a song and I like singing’; ‘My favourite task is when I write the letters on a piece of paper and I like it when our teacher asks me to write the alphabet’; ‘[...] because you learn more things that make me feel that I am older’; ‘[...] because we have a good time and at the same time we learn’; ‘[...] because I practise the letters and I learn how to read and write some words’; ‘[...] because I learn what the older children know’; ‘ We play with letters and we write words’; ‘When we play with the letters I learn a lot and I will be able to read and write by the time I go to the first grade’

According to children’s reports, their experiences of literacy were considered a game, which they enjoyed. The reason may be because they realised that through play they could attain literacy, which, as mentioned above, was an adult characteristic. Additionally, it may have been that all this knowledge in relation to literacy was new to them and intriguing. Nevertheless, asking children whether they had learnt what their teachers taught them regarding literacy before their entry into kindergarten (question 12

of the child interview questionnaire at T2-Appendix 5), it emerged that half of the children had not been shown the letter names and sounds or how to read and write words at home. This finding suggests that half of the sample was first immersed into the bottom-up model of literacy acquisition. In relation to class, over half of the children in classes B and C reported that they had prior knowledge of the bottom-up literacy skills (e.g. letter names and sounds, word and name reading and spelling) against only a third of the children in class A. The empirical data on children's performance on letter knowledge and on reading and spelling indicated that there were some children in all three classes that had some prior knowledge of literacy.

Additionally, many children said that their teacher always helped them when they faced difficulties in reading or writing something. Nevertheless, a lot of the children reported that they did not ask for their teacher's help, because they thought they could cope on their own. The majority of them also said that the primary school would be the most appropriate place to learn literacy compared to kindergarten. Some of the reasons they reported are:

' [...] my dad is a primary teacher and he will teach me reading and writing'; ' I like primary school more than kindergarten and that's why it's better to learn literacy there'; 'Primary school is bigger and I will learn literacy better there than at kindergarten'; '[...] because in primary the teacher has lots of papers and pencils and she writes more letters'; ' In primary I will be able to write all the difficult letters and even the difficult words'; 'At the first grade children learn many things and most of all how to read and write many words'; ' [...] because I am going to have many books there'; '[...] because I will be older'; '[...] because it's going to be more difficult there and I like difficult things'; 'There we are going to have books and do exercises'; ' Primary lasts longer and we can learn more things'

Their responses suggest that they believe that literacy should be learnt in a more formal learning context such as primary school, maybe because they thought it would be difficult for them to acquire literacy while they were in kindergarten. They may also have thought that having books and notebooks makes literacy learning more explicit and more understandable to them. However, these children did not have any experience of primary school and their views may reflect their parents' opinions or they may be based on the

experiences of older siblings. Nevertheless, there were children who thought that kindergarten was a better place than primary to learn literacy. They justified their responses by saying that:

' [...] because in kindergarten teachers are better than in primary school'; 'In kindergarten things are easier, so it would be easier to learn literacy in kindergarten'; '[...] when you are in kindergarten you can learn while you are very young so when you go to the first grade you will already know reading and writing'; 'Kindergarten prepares us for the first grade and if we know literacy it will not be so difficult for us'; '[...] kindergarten because we also play here'; 'Kindergarten is more beautiful school and I want to stay here and learn how to read and write'

Children's reports suggest that probably they preferred kindergarten because they did not have any experience from other learning contexts. It may also have been that the children felt ready and they had the urge to learn how to read and write before they go to primary school. There was a change in children's views regarding where literacy takes place over time. Upon entry, most of children were of the view that they would learn reading at home and writing in kindergarten, whereas at the end of the study the majority reported that it was better to learn literacy in primary school. Six months after the first interview with the children there was a change in their views regarding where literacy takes place. Children's experiences from kindergarten and from home may have had an effect on their views resulting in this change. Table 10.15 summarises children's responses to the questions 19, 20 and 21 of the child interview questionnaire at T2 (Appendix 5). According to children's reports a large number of children were found to be practising at home what they had been learning in kindergarten relative to literacy. In relation to class, no differences were found regarding the practice. Those children who reported that they did not practise said either they

Table 10.15: Children's dealing with literacy at home and parental involvement

	Practice at home		Help		Who
	Yes	No	Yes	No	
Class A	13	5	4	9	Parents
Class B	10	6	5	5	Parents, siblings, grandparents
Class C	16	4	15	1	Parents, siblings, grandparents

wanted to play with their toys at home or they felt that practising was tiring for them. From those children who reported that they practised at home, a lot of them did not ask for any help from their parents or other family members, because they preferred to deal with it on their own. Relative to who was usually helping them when they were trying to read or write something, apart from the parents who predominantly helped them, grandparents and siblings were also found to take part in young children's literacy learning at home. According to children's reports, parents, though not all, usually praised their effort on literacy learning. Additionally, they were trying to show children how to write their names, the alphabet letters and some words, to copy short sentences, to recite the alphabet and to play word games.

Children's responses to the interview questions provided significant information about their views on literacy, the meaning that literacy holds for them and their experiences of literacy both at home and in kindergarten. These data from child interviews will be connected to the empirical data from children's performance on literacy tasks and the data from the teachers' interviews in order to provide more evidence on the Greek kindergarteners literacy knowledge, which will be further explored in the Discussion chapter.

CHAPTER 11: Teacher interviews

The importance of the teachers' role and of the effective instruction in areas of knowledge such as phonological awareness and letter knowledge for developing children's literacy skills is set out in the Literature Review chapter.

11.1 Procedure

The teachers' recorded interviews were translated and transcribed. The first step of the analysis was to divide teachers' responses according to themes and then summarise the information from each theme in order to illustrate their views on early literacy, their experiences from literacy teaching and their teaching practices, and to make each teacher's profile. An example of this analysis is given in Appendix 12. The next step was to investigate any relation between teachers' practices and views, and children's performance on literacy tasks and their experiences in literacy; to explore any individual differences in their views on literacy and in their teaching practices. Each interview is presented individually.

11.2 Results

Teacher A (T1)

Teacher A had been working as a kindergarten teacher for twelve years and her professional training lasted two years. She took part in several seminars regarding general educational issues organised by the local authorities, but she had not received any in-service training. Relative to her teaching practices she claimed that she spent three hours per week (or forty minutes per day) on dealing with literacy tasks. Before starting her teaching programme she ascertained that the materials and the plan of the tasks were appropriate for serving the aims of the programme. Usually the materials she used were books (both pictorial and textual), tapes with songs and fairytales and commercial literacy games (e.g. cubes with letters, cards with letters and words). The library corner consisted of a large number of books that children could take, rifle through their pages and look at the pictures. These were regularly replenished in order to stimulate children's interest.

The tasks applied in terms of the literacy programme were of low difficulty and gradually were becoming more difficult, without exceeding children's skill limits. She was trying to implement different kinds of tasks every day, so that children would not get bored. During her teaching she focused on older children and did not ask the younger ones to take part, because she was of the view that the younger group would not cope with the tasks. However, she said that the younger group had the urge to participate in the literacy games and put in a lot of effort.

The starting point of her programme regarding writing was teaching children how to make different kinds of lines (e.g. straight, crooked, etc.) in order to practise their dexterity. As a proponent of the whole word approach, teacher A focused on children's learning of how to read words visually, without applying any phonics. She read the words repeatedly, so that children could link the words' visual representation to their phonemic representation. That is because she believed that it is difficult for young children to learn to manipulate smaller speech units such as syllables and phonemes. Apart from visually identifying words in isolation, teacher A was asking children to identify words within lists and was teaching them how to identify their names. After children had consolidated the concept of word, teacher A taught them the concept of sentence and how to visually read small sentences, which were usually fairytale titles. Concurrently, teacher A taught children the names and the sounds of the alphabet letters. However, teaching the alphabet while she supported the whole word approach suggests that apparently she did not relate the letter sound teaching to the word reading. She limited her teaching to introducing the sounds of the letters in isolation without connecting them to reading. Relative to the letter cases she focused more on showing the children the uppercase letters because, as she said, they were more familiar to them. Regarding writing, teacher A reported that children were not yet ready to spell words, therefore, according to her, an appropriate writing task was to ask them to copy lists of words from the blackboard in order to memorise their visual representations.

It appeared that her teaching practices were based on her views on early literacy. Specifically, she said that children at this young age children were ready to be immersed into literacy, provided that they had the right incentive. She was of the view that literacy could not be taught in kindergarten in the same way as in primary school. Letter names

and sounds, as well as directionality of print and a limited sight vocabulary is the knowledge that children should acquire during their time in kindergarten. According to teacher A, the effectiveness of early literacy instruction on later schooling depended on children's maturity, skills, and attitude towards literacy in general. Looking at her pupils' responses towards literacy tasks she said that it was evident that they enjoyed dealing with literacy and had the urge to learn more about print. Nevertheless, their first reactions towards newly introduced tasks or tasks that were hard for them were not positive and she added that their responses to literacy depended on the way the literacy tasks were presented to them. Referring to the children's performance on literacy, teacher A pointed out that there were differences between them due to factors such as age (younger and older group), the amount of literacy experiences, motivation, personality and interest. Regarding age the analysis of the present study contradicts teacher's A claims by indicating that there were generally no differences between younger and older children.

Teacher's A views on the new literacy curriculum was that it facilitated self-action, it was flexible, it stimulated children's interest in written language and it broadened their thinking around print. By contrast, the old curriculum was stereotyped and limited to pre-literacy activities. The main scopes of the new curriculum, as interpreted by teacher A, were to present literacy as a game, help children to explore the world of print and encourage them to show their skills and develop them. However, she was of the view that it was essential not to repeat in the first grade what was being taught in kindergarten, because the aims of the curriculum would not be served. Nevertheless she added that changes should be made in the curricula of the 1st and 2nd grade in order to follow the developments. However, she also reported that the Ministry of National Education and Religious Affairs (MNERA) had not given official guidelines for the implementation of the new literacy curriculum for kindergarten and that the books supplied by the Pedagogic Institute were not helpful. This resulted in teacher A interpreting the curriculum and organising the literacy programme in her own way. However, she said that she was not sure whether her teaching plan would be effective and she added that if there were any guidelines given to her they would help her to convey the curriculum's deeper understanding and implement it more effectively.

Regarding the parents' role, teacher A reported that generally it is very important, because a highly educated home background facilitates children's literacy learning. She was of the view that rich literacy experiences result in further developing their skills in kindergarten, as well as stimulating their interest. However, teacher A reported that parents believed that children should learn literacy in primary and not in kindergarten, because they are very young to acquire such knowledge. This is why she reported that she would prefer parents not to interfere in their children's literacy learning, because they are not supportive and they do not know the appropriate way to do it resulting in children's confusion and frustration.

Teacher B (T1)

Teacher B had been working as a kindergarten teacher for thirty-four years and her professional training lasted two years. She took part in several seminars regarding educational issues and she had received in-service training. Regarding her teaching practices teacher B spent fifteen minutes per day on literacy. Before starting her literacy programme, she checked whether the tasks were appropriate for children's needs. The materials used for her literacy plan were commercial literacy games (e.g. jigsaws with letters, cards with words), as well as books (e.g. fairytales, poems), and tasks developed by the teacher. The school's library corner had plenty of books that children could 'read' by looking at their pictures and making their own stories. Her primary aim was to immerse children in literacy through play. This is why teacher B suggested that when teaching literacy a teacher should be innovative, creative and structured in her/his plans.

However, among the aims of her teaching plan was presenting the tasks in as friendly a setting as possible, and this is why she adapted the content of the tasks according to children's skills. Having children of different ages and abilities could lead to giving tasks of medium difficulty. Besides, according to her, the criteria followed when a task is applied are children's home background, socio-economic status, religion, personality, and motor-cognitive skills. However, teacher B said that during her literacy teaching she focused on older kindergarteners, having greater expectations of them than of the younger group. It is quite enough for the younger group to just listen and not take part, since they needed a lot of effort to complete a task that might frustrate them. Nevertheless, as she said, they tried as hard as the older ones and sometimes they did

better than the older ones. Teacher B added that she gave the younger group fewer and easier tasks than the older group.

Regarding reading, teacher B applied tasks that were based on the whole word approach modified by sound analyses. Specifically, according to her report, first she taught children how to identify the whole word, and then how to break it down into syllables and phonemes. This is because she believed that this method would be more effective for kindergarteners. She added that she wrote words on the blackboard, which she repeatedly read and then she broke them down into their constituent syllables and phonemes. Then she asked the children to count the syllables or the phonemes of the words by clapping and she wrote the correct answer beside each word. Through this task, children, apart from learning how to break a word down into its smaller units, were simultaneously helped to understand the concept of word, of syllable, and of letter. This shows that teacher B applied tasks aiming to develop children's phonological awareness skills and their knowledge of concepts about print. Amongst her aims was also to help children build up a sight vocabulary comprised from high frequency words, the children's names and other familiar names, which they could retrieve when necessary. Building up a sight vocabulary was also amongst the aims of her teaching plan. However, she was of the view that phonics should be introduced in the first grade. The fact that her teaching plan included the manipulation of a word's units contradicts her suggestion that phonics should be taught in the first grade. Thus, it emerged from her programme that teacher B used phonics instruction but she did not relate this to word decoding.

Relative to writing, teacher B said that children first should practise their dexterity by being taught how to make all different kinds of lines (e.g. zig-zag, straight, etc.) and then by being taught the directionality of print first by walking on these lines and then by drawing them on different surfaces and on papers of different sizes. Additionally, teacher B reported that she encouraged her class to write in upper case letters, because lower case are more curved and need more delicate handwriting skills which, according to her, young children did not have at the beginning of the year. Specifically, regarding word writing, teacher B said that she showed the children a written word and then she asked them to form that word by using magnetic letters on a board. Another task was that she showed them cards with written words that she repeatedly read and children were

required to copy them down. Thus, in relation to writing teacher B emphasised word copying. This is consonant with what teacher A reported regarding writing.

Though she believed that phonics should be taught in the first grade, she was of the view that young children could be taught the bottom up parts of literacy but not in the way they are taught in primary school. The reason she gave for this was that they are not mature enough to consolidate such knowledge. However, she said that early literacy learning is beneficial for later school performance. She added that the richer literacy experiences children have, the more ready they are to receive systematic instruction in primary school. Teacher B reported that children's attitudes towards literacy tasks were not always very positive, because they were not used to dealing with such tasks. However, as she said, children's attitudes depends primarily on the way the teacher presents and applies the tasks.

Teacher B's views on the books supplied by the Pedagogic Institute was that they were totally unhelpful to her and some of the suggested tasks included appeared to be difficult or less applicable because it was confusing or not clear to her what the tasks required. Commenting on the old curriculum, teacher B reported that it was stereotyped, with no flexibility in its tasks and it focused on pre-literacy activities. Though the new one was not a radical change in pre-primary education, it enabled the teacher to initiate alternative teaching methods and improvise on her teaching plan. However, the curriculum should be renewed regularly in order to follow the developments. Nevertheless, she pointed out that no official guidelines were given for its implementation and she added that there was no unified way of implementing the curriculum resulting in having kindergarteners with different levels of literacy skills ready to go to the first grade. Another disadvantage of the new curriculum that the teacher reported was that it was adapted from the Spanish curriculum and the educational authorities tried to apply it without considering that it might not be appropriate for Greek kindergarten. The examples given in the teacher's handbooks to help them apply the tasks suggested by the curriculum were not in Greek but in Spanish. As she said it was not possible for her to make any reference to those books, because she did not understand Spanish. She was of the view that the implementation of the curriculum was

unsuccessful, because the authorities did not take into consideration that they were dealing with language and the examples were not in the Greek language.

Additionally, regarding whether there are any changes that should be made in the curricula of the 1st and 2nd grade, since the curriculum for kindergarten changed teacher B reported that there are some changes that should be made in relation to their aims and the content of the tasks applied. Further, more careful planning is needed, because repetition of what is being taught in kindergarten during the first two months in first grade is likely to lead to children's lack of interest and failure. That is why all kindergarten teachers ask for pre-primary education to be made compulsory. In this way all first graders will start from the same point. However, as teacher B said nothing has happened yet .

She further believed that the parents' role in children's literacy is very important, because the experiences children acquire at home have a facilitatory effect on their literacy development. She also added that home literacy experiences are the basis on which the teacher builds up further children's literacy knowledge. Her suggestions to parents on dealing with children's literacy at home were to focus on the alphabet and on directionality of print. However, she argued that parents seem to have very limited time to deal with their children's literacy learning due to their professions.

Teacher C (T1)

Teacher C had been working as a kindergarten teacher for thirty years. Her professional training lasted two years and she had never attended any seminars nor had she received any in-service training. Nevertheless, she suggested that the Ministry of National Education and Religious Affairs (MNERA) should organise some seminars regarding the implementation of the new curriculum, because, as she said, there were teachers who organised their plans led only by their practical experience and the books supplied by the Pedagogic Institute. According to her report the average time she spent on literacy was three times a week for 15-20 minutes. In relation to organising her teaching she exchanged ideas with colleagues about the content of the tasks that she would apply and the appropriate way to do it. The materials used were books with the alphabet, a board with magnetic letters for writing, commercial literacy games (e.g. cubes with letters, jigsaws, cards with letters and words), posters with the alphabet and pictures

representing words, and a pinboard on which words from children's daily vocabulary were pinned.

The school's library corner had a lot of books that children could take and turn over the pages pretending to read. Teacher C's primary aim was not to frustrate children, since it would be their first contact with print in a school context. Therefore teacher C planned her programme by starting with the easy and basic parts of literacy, and then gradually raised the range of difficulty in order to make it more challenging. She was of the view that having children of different ages, skills and experiences quite often required an adaptation of the tasks' content in order to make them friendlier and to encourage children to improve themselves. She had noticed that at the beginning there were children who already had some knowledge of concepts such as the letters and the sounds and she added that the teacher's work becomes more difficult when she has to balance the differences between children, and she has to make her teaching plan as effective as possible. Nevertheless, in order to stress the significant effect of schooling she reported that whenever there were any differences between children at the beginning, by the end they had gradually diminished.

The starting point of her literacy plan relative to writing was teaching children how to draw different kinds of lines, so that they could practise their dexterity. According to the teachers' reports all three of them started their teaching relative to writing by focusing on developing children's handwriting skills. Teacher C's first priority was to teach children how to write their names by copying them down. However, as she reported, there were a few of them who already knew how to write their names. The empirical data verify this by showing that the majority of children knew how to write their names. Simultaneously, she applied tasks whereby children could practise their handwriting by drawing alphabet letters (e.g. join-the-dots alphabet puzzle, writing letters on papers of different sizes). Additionally, in terms of teaching them how to identify the graphemes, she asked them to find particular letters in a short passage regardless of their position within the word. Regarding the alphabet letters, she said that she focused primarily on the sounds and applied tasks where children were required to find words that start with each sound and then sound out each word. It is evident from her report that she applied tasks on letter sound knowledge and on phonological awareness. The results on

literacy tasks showed that children in class C had good knowledge of the sounds both in lower and upper case. In terms of letter case she was placing emphasis on upper case letters. It has been suggested that all three teachers emphasised uppercase letters because they were more familiar to the children (e.g. from signs, labels etc.) and more linear, thus easier for children to write. Relative to reading, it was amongst her aims for children first to acquire a visual vocabulary and that is why she taught them first how to identify words with a prompt of pictures. Then she applied tasks where children were asked to decode words. Building up a sight vocabulary was consonant with the aims of teachers A and B. Nevertheless, she extended her plan by applying tasks on word decoding.

From her report it was evident that her practices were based on her views on early literacy. Specifically, she believed that children enjoy dealing with literacy and are able to acquire it in kindergarten, provided that they have previous experiences from their home background. Through this, teacher C suggests the important role that parents have in their children's literacy acquisition. The more encounters children have with print and literacy games at home, the more likely it is to develop their literacy skills. Further she added that kindergarteners are able to develop writing more easily than reading, because they have fewer boundaries in expressing themselves through writing at this stage. By contrast, in reading, violation of the conventional way is not accepted. Teacher C's view on this is consonant with what the vast majority of children said about the fact that reading is harder for them than writing. Additionally, she pointed out that literacy teaching in kindergarten should differ a lot from that in primary and that kindergarten is not meant to substitute the 1st grade. The changes that were made in the literacy curriculum for kindergarten should also affect literacy curricula in the 1st and 2nd grade in order to make literacy teaching more effective. The analysis of all three teachers' reports showed that they all believed that the curricula of the 1st and 2nd should also change in order not to have repetition of the same amount of knowledge.

Commenting on the old curriculum, teacher C said that its focus was on developing children's pre-literacy and motor skills and only three months before the end of the year the curriculum suggested teaching a few things about sentences and letters. By contrast the new one, as teacher C said, gradually immerses children in literacy by helping them develop their skills and master language. So before they go to primary

school they will already know the basic concepts about print such as the directionality of print and the mechanisms of reading and writing. Regarding the implementation of the new curriculum, she said that she did not receive any official guidelines, which means that she had to interpret the aims of the curriculum and improvise on her teaching plan without any suggestions and clues. This is consonant with what teachers A and B reported regarding the lack of guidance. In general teacher C believed that the curriculum served its aims, but she thought that some of the tasks suggested in the teachers' books should be skipped because they were difficult for kindergarteners (e.g. tasks including consonant and vowel digraphs and consonant clusters). She was of the view that it was too early and probably hard to engage children in such tasks.

Regarding the role of parents in children's literacy she said that a supportive family facilitates children's learning. Parents quite often asked how they should deal with children's literacy, and she suggested that it would be better to focus on their writing (e.g. copying words and sentences down in order to realise that a sentence consists of a group of words) rather than on reading, because the inconsistency between home and school instruction on reading would confuse them and may cause further problems. It is suggested by the reports of all three teachers that the role of the home background in children's literacy development is very important. However, teacher C believed that parents' involvement should be limited to writing, whereas teacher B thought they should include teaching the alphabet and the directionality of print. By contrast teacher A preferred the parents not to interfere practically in their children's learning of how to read and write because from her experience, parents usually are not supportive and this impedes her literacy teaching.

Teacher A (T2)

At the end of the kindergarten year, and after six months of early literacy instruction, teacher A reported that she continued applying tasks whereby children practiced their handwriting skills (e.g. teaching them how to draw different kinds of lines). The range of task difficulty had been raised since the beginning of the year. Teacher A did not think that there were any difficult tasks applied and she added that a task's success depends strongly on the way a teacher presents it to her class and on how

interesting the task appears to be for young children. She was of the view that literacy learning through play makes it friendlier to kindergarteners and helps the teacher overcome any difficulties. However, though she thought that the teachers' books were very helpful, she preferred developing her own tasks, because they would be designed according to children's needs and therefore would be more effective. The fact that teachers' books were very helpful contradicts her opinion about them at the beginning of the year. This contradiction may have resulted from a more thorough study of those books within these six months that may have changed her view about them.

In terms of reading, she placed an emphasis on teaching children how to visually identify words and names within lists, because she thought that it would be easier for young children to learn groups of words with similar concepts e.g. domestic animals-cat, dog, etc. Her plan included tasks where children were required to visually identify the labels from things such as commercial products. Regarding the letters, her instruction plan was to teach them how to find differences between sets of written words regardless of the position of the graphemes within a word and identify the words that started with the same grapheme, as well as tasks where children were asked to find words that start with each sound of the alphabet. In terms of writing, she emphasised the teaching of capital letters, because children predominantly wrote in upper case rather than in lower case. Thus her instructional programme consisted of tasks on letter knowledge and on building up a sight vocabulary. Similarly to the beginning of the year, she did not relate the letter sound knowledge to decoding. Additionally, she continued teaching the uppercase letters without making any reference to the lowercase, because, as she reported, children predominantly used the uppercase.

Though there were differences in performance between younger and older groups, as well as between those children who had more literacy experiences and those who had not, teacher A did not differentiate the tasks and applied the same tasks to all children. However, she hoped that children could cope but they did not in all cases. Nevertheless, the analysis of children's performance on literacy tasks showed that there were no differences between older and younger kindergarteners both at the beginning and the end of the year. Likewise, there were no differences, in general, between children regarding their literacy experiences. According to her there was not much improvement since the

beginning but it was significant that they had clarified the directionality of print, had learnt most of the letters and could identify differences in graphic features between words. Moreover, she observed that there were children in her class that could read and write by the end of the year. The results of the empirical data verify her observations.

Her opinion on early literacy was that all children showed great interest in dealing with literacy, regardless of age or experiences, and she added that young children could acquire decoding and blending skills provided that teaching was suitable for young children and it kept children's interest alive. Nevertheless, they would need more effort than the 1st graders, which may result in frustration. Moreover, though she said that the new curriculum was beneficial for children, she expressed her doubts about the beneficial effect of early literacy learning *per se* on children's later schooling.

Teacher A appeared to have the same view on this both at the beginning and at the end, which means that there was no change in her opinion regarding the effect of early literacy, even after the suggestions of the new curriculum.

Regarding the role of parents in children's literacy learning, she reported that it is very important for children to acquire rich literacy experiences from their home background, provided that these would not oppose those acquired in the school context. Inconsistencies between home and school would result in failure of teacher's teaching plan. According to her, very few parents were interested in dealing with their children's literacy learning, because, in general, parents appeared to believe that literacy should be taught in primary rather than kindergarten. However, the children's reports regarding their parents' involvement in their literacy learning contradict teacher's A view. Her personal opinion was that parents did not understand the importance of early literacy teaching or they did not know how to deal properly with their children's literacy, therefore their involvement would hinder her teaching plan. Parents' dealings with children's literacy, according to children's reports, illustrate that they may have been aware of the significance for children of early literacy learning and that is why they dealt with it at home.

Teacher B (T2)

At the end of the kindergarten year teacher B completed the scheduled pre-literacy activities (e.g. making different kinds of lines) and she noticed that a lot of

children were able to identify the alphabet letters or at least most of them. The empirical data showed that children in class B at T2 had good knowledge of the names and the sounds of the letters, verifying the teacher's observation. However, as she said, most of the children could not blend the sounds of the letters. According to her those children who were found to be able to read and write had older siblings or parents who were dealing with their literacy. From the children's reports it occurred that the vast majority of the parents were dealing with children's literacy. Nevertheless, the empirical data indicated that only a few of them could read some words. Therefore since the teacher did not apply any tasks relative to decoding or blending, those children who could read and write may have been taught literacy at home from their parents or other family members. This supports teacher's B remark.

The content of the tasks she applied, as she said, did not differ from those at the beginning of the year but she had raised the level of difficulty. More emphasis was placed on pre-literacy tasks and on developing children's motor skills, because she believed that they should consolidate their previous knowledge in order to move on to more advanced literacy tasks. The same tasks were applied to all children, regardless of age and skills. However, she did not insist on the younger group taking part and she did not have the same expectations from the two groups. As she reported she did not face any particular difficulties in her teaching, and as she said, her long experience helped her on that. Before implementing her teaching plan she ascertained that the tasks chosen were appropriate for the level of her class.

Relative to alphabet letters, teacher B implemented tasks where children were required to pronounce the sounds of all alphabet letters and find words that start with each sound. Apart from these, she also focused on practising children's skills on identifying the graphemes. The task she developed was asking children to identify certain graphemes in a short passage, regardless of their position within the words. Regarding reading, she asked children to read words visually. Though teacher B reported that children at this early age could learn how to read and write she did not apply any tasks of blending or grapheme-phoneme correspondence. She insisted on teaching them how to identify some words visually and build up a sight vocabulary. Similarly to the beginning she did not relate letter sound knowledge to decoding. Additionally, she employed a task

where she was reading an incomplete sentence and children were required to find the missing word within the sentence. The last task further aimed to teach children the concept of the sentence.

Regarding writing, amongst the tasks she was following, was asking children to copy words down from the blackboard, because she did not think that it was appropriate for kindergarteners to write words down. Moreover, extending her literacy teaching plan, she applied tasks on language knowledge that aimed to teach children morphological rules (such as number in nouns, gender in nouns, verbs, adjectives, etc).

Describing children's responses towards literacy, she said that children who had a supportive home background enjoyed dealing with literacy more than those who did not. From children's reports it was emerged that the vast majority of children in class B enjoyed dealing with literacy and it appeared that there were no differences between children in relation to their literacy experiences. However, comparing them to the beginning of the year, teacher B reported that children's interest was raised about the world of print (e.g. trying hard to write their names, their friends' names or copy down whatever is written etc). According to her this rise in interest was due to the more challenging tasks that were more intriguing. In relation to children's attitudes towards literacy, she noticed that by the end all children in her class, although there were some differences in their experiences when they started, had become more familiar with the letters and sounds, and with the various literacy games.

Generally, her view on early literacy was, as mentioned above, that young children can learn how to decode and apply phoneme-grapheme correspondences. However, the way of teaching these required very careful planning in order not to fail. She was of the view that teaching literacy in kindergarten is difficult for two reasons. One is because children are too young to understand some concepts of literacy and the other is that children come to school already having some knowledge of literacy from their home. Relative to the latter the difficulty is that there is an inconsistency between teacher's and parents' instruction, which is likely to result in children's confusion. This is consonant with what teacher A reported. Commenting on the curriculum and its implementation, she said that it had many weaknesses. More specifically, she pointed out that apart from the fact that she did not receive any guidelines until the end of the year, the teacher's books

had some tasks that were inappropriate, did not give any information about the tasks' application or about what should be avoided, and above all, no investigation was made about its effectiveness after one year of implementation in Greek kindergartens. These made teacher B very sceptical.

Regarding parental involvement, she said that collaboration between parents and teacher is essential, provided that parents are open to discussion and follow some instructions regarding their children's literacy learning. Nevertheless, there should be a line between what is taught at home and what is taught in kindergarten, so that children do not repeat the same things, which may result in them considering kindergarten boring. As teacher B reported, in recent years parents appear to think more highly of kindergarten, whereas in the past it was just a day care service for them. However, she believed that due to their professions they seemed uninterested in their children's progress. Finally, similarly to teacher A she was of the view that parents should not interfere in her teaching because it would not be helpful but rather disastrous.

Teacher C (T2)

At the end of the year, teacher C indicated that she was applying similar tasks to those at the beginning, though she had raised the level of difficulty. Nevertheless, these tasks were of medium difficulty because she did not want children to get discouraged and feel frustrated. She addressed these tasks to all children regardless of their age and skills, because she believed that both younger and older kindergarteners or more able and less able would benefit from literacy teaching and she added that she did not have the same expectations from all children. According to her, younger kindergarteners do not want to differ from the older ones and she did not wish to discourage them. She was of the view that the less advanced children could learn not only from their teacher but also from their more advanced classmates. Regarding whether she got any help from the teachers' books teacher C reported that they helped her a lot to make her teaching plan but she also got some good ideas from discussions with colleagues, which she materialised and they were very effective.

Regarding the tasks she applied in her literacy teaching plan at the end of the year teacher C said that after teaching the sounds she applied tasks that would develop children's skills in manipulating speech segments, and, in turn, facilitate their reading attainment. Specifically, one of the tasks required children to take cards with syllables and blend them into words. Another task was asking children to read words of simple CV syllables that do not include vowel or consonant digraphs. These suggest that in contrast to the others, she related the letter sound knowledge and phonological awareness to word reading. In relation to writing, she focused on teaching children, both the uppercase and the lowercase letters and how to write small sentences correctly by teaching them to leave gaps between the words. Regarding the letter case, teacher C was the only one of the three who taught children the lowercase letters. However, the empirical data from children's performance on literacy indicated that there was no difference between the classes showing that, though the children in classes A and B had not been taught the lowercase letters by their teachers, they did not differ from those in class C who had. This illustrates that the children in A and B may have acquired this knowledge from their literacy experiences at home.

During her teaching teacher C made some observations on children's performance. She reported that children found it hard to learn the directionality of print; that those who had more literacy experiences than others had better letter knowledge; there were no children who knew how to read and write; they found it hard to write words that were being dictated to them and they were just writing the consonants instead. Further she added that, since the beginning of the year children's writing became tidier; graphemes became smaller and children were able to write on paper with lines; word reading became quicker; their knowledge of letter names and sounds increased; they became more familiar with literacy games and they improved their skills in manipulating speech segments and in identifying differences in graphic features between words. In relation to teacher C's remarks, the empirical data showed that class C scored nearly ceiling on CAP suggesting that they had very good knowledge of the directionality of print and that there were children in class C who could read and write. These contradict the teacher's observations. Specifically, relative to what the teacher reported about children's writing, it could be suggested that this shows that the teacher may not have

known that quite often young children partially represent the sounds of a word in their spellings. These spellings indicate that children, according to Ehri's developmental theory of spelling in English, are at the semiphonetic level. Generally, children in class C showed some progress in their literacy skills by the end of the year verifying the teacher's observation.

Additionally, teacher C reported that younger children did not have the same skills as the older group, but they tried just as hard. Nevertheless, the empirical data contradict teacher's C report because it was found that there were no differences in performance between younger and older kindergarteners. She also said that though there were differences in experiences between children, they did not seem to differ in their interest in literacy and they all seemed to enjoy it and wanted to learn more about it. However, according to children's reports, in general children in class C did not have any differences in their experiences of literacy. Further she was of the view that a kindergartener can be immersed in literacy provided that his/her pace is followed; then the outcome will be successful. This is consonant with what teachers A and B suggested in their reports. In relation to the tasks suggested by the curriculum she reported that she had to skip those with consonant and vowel digraphs and multi-syllabic words because children were too young to conceptualise and manipulate all this knowledge.

Regarding parental involvement, teacher C said that parents facilitate children's literacy learning by showing them a few things at home, especially in writing, such as how to hold the pencil or how to write their names. By contrast in relation to reading, it is better for parents not to interfere, because different methods are followed and the inconsistency might cause confusion and frustration, which in turn would lead to failure. This shows that teacher C still had a similar view on parents' participation in children's literacy to that at the beginning. She also added that those parents who had children older than the kindergarteners knew more things about the way of teaching literacy at an early age than those who did not. Teacher C reported that collaboration between home and kindergarten is essential for children's best interests, otherwise it would not be possible to cope with any occurring difficulties or to work together in order to help them develop their literacy skills. She added that she would not say that the parents were not interested in their children's performance and their life at kindergarten.

11.3 Discussion

The investigation of teachers' responses to early literacy illustrated that they all shared the view that children at this early age can be taught the bottom-up processing skills of literacy. Nevertheless, they stressed that literacy teaching in kindergarten should differ from literacy teaching in the first grade. Some of the reasons they said were that kindergarten is not meant to substitute the first grade and that kindergarteners were not yet mature enough to consolidate the knowledge acquired in the first grade in terms of the systematic literacy instruction. All three teachers suggested that when teaching literacy to young children, it is essential to have a well designed teaching plan that will stimulate children's interest in written language and will facilitate the development of their literacy skills. According to them play is the most appropriate means to immerse children in the world of print and acquire the knowledge that will help them attain literacy and do well later, at school. Additionally, teachers pointed out that children's experiences of literacy, as well as other factors such as motivation and interest have a strong influence on their performance on literacy.

Regarding this, all three teachers suggested that it is very important to present the tasks in as friendly a setting as possible, because is not only hard for young children but also something not so familiar to them. They all reported that their primary aim in designing their teaching plans was not to overload children and make them frustrated. They started their teaching plans with tasks of low difficulty and gradually they raised the range of difficulty. The content of the tasks they applied was adapted according to children's skills and interests in order to be more friendly and more challenging for them. However, they all suggested that it is better to give the same tasks to all children, regardless of their age and of their previous experiences, because they believed that they would all benefit from the teacher's literacy teaching by gaining some knowledge that may stimulate their learning and develop their skills. They were of the view that differences between children relative to these factors are likely to cause difficulties in applying a teaching plan, therefore a teacher has to balance those differences in order to apply her plan effectively. According to teachers' reports the materials available for their

teaching were sufficient and children were able to deal with printed materials in school setting.

Relative to younger kindergarteners all three teachers said that, though they are less cognitively advanced and they need to put more effort into completing the literacy tasks, they showed a great interest in taking part. The teachers reported that they did not have the same expectations from the younger and the older group. They all said that the younger kindergarteners' participation in the tasks and the stimulation of their interest were more important than the results of their performance on literacy tasks *per se*. Regarding children's literacy experiences all three of them reported that they have a very important role in children's literacy acquisition. As teacher B reported, the richer the literacy experiences children have, the more ready they are to receive systematic instruction in the first grade. In their reports, teachers B and C said that early literacy teaching can be beneficial for children's later performance. Nevertheless, though teacher A believed that what the new curriculum suggested was useful for kindergarteners, she expressed doubts about the beneficial effect of early literacy on children's later school performance.

The teachers planned their teaching practices based on their views of early literacy. Similarities and differences were found between the three literacy teaching plans. Regarding reading, teacher A focused on prompting children to visually identify words in isolation, words within lists, and their names in order to build up a sight vocabulary with words of high frequency. Additionally, she also taught children how to visually identify short sentences that were usually fairytale titles. Similarly to teacher A, teacher B aimed at teaching children how to visually identify words, names and building them up a sight vocabulary. Nevertheless, she extended her teaching and applied tasks that developed children's phonological awareness skills. Likewise, teacher C included in her teaching plan tasks on phonological awareness and aimed at children building up a sight vocabulary. However, in contrast to teachers A and B, teacher C also employed tasks where children were required to decode words. In relation to letter knowledge, all three teachers taught children the letter names and the sounds, and applied tasks of letter sound knowledge but teacher C reported that she placed great emphasis on letter sounds. This suggests that, though all of them introduced children to letter sounds, only teacher C

related the letter sound knowledge to word reading in her teaching plan. Additionally, in terms of letter knowledge all three teachers implemented tasks that required children to identify particular graphemes in short passages regardless of their position within words. However, in contrast to teacher C, teachers A and B applied these tasks only at the end of the year.

Regarding writing, the tasks applied predominantly focused on copying down words and their names and on practising children's dexterity. Teachers A and B were of the view that kindergarteners were too young to spell words. Nevertheless, teacher C at the end of the year applied tasks where children were asked to spell words and small sentences that were being dictated to them. In relation to the letter case, teachers introduced children to uppercase letters, because, as they reported, they were more linear than the lowercase and therefore easier to write them, and more familiar to them because the environmental print was predominantly in uppercase. Nevertheless, teacher C, at the end of the year, also taught children the lowercase letters. Further, regarding the basic conventions of written language, all three teachers taught children the directionality of print. However, in terms of their teaching, other concepts such as the sentence, the word and the letter were implicitly taught.

At the end of the year the content of the tasks in the three teaching plans remained the same, though the range of difficulty was raised, and more tasks were added in. For instance, teacher B began to introduce children to linguistic knowledge by teaching them morphological rules. Evaluating children's performance at the end of the year, teachers A and B reported that they had noticed children who could read and write, whereas teacher C said that she had not. According to teacher B, those children who had attained literacy by the end of the year had supportive families and older siblings that were already in primary school. The analysis of the empirical data on children's performance on literacy tasks showed that the instruction children in class C received in letter sound knowledge and in relation to decoding helped them develop their letter sound knowledge and their word reading skills, and perform better than the others. Additionally, the instruction given by teacher C resulted in class C having better performance than A and B on word spelling too. As for phonological awareness, children's skills in general were good at entry. However, though teachers B and C applied tasks on phonological awareness, there

was not much improvement by the end of the year. Amongst the findings was that, though teacher C reported that children in her class found it hard to learn the directionality of print, children in class C had good knowledge of CAP at entry.

Generally, their views on the currently implemented curriculum were very positive. More specifically, all three reported that compared to the previous one, which was stereotyped, and focused on developing pre-literacy skills, the new curriculum facilitates children's self-action, immerses them in the bottom-up parts of literacy, and broadens their thinking and understanding of the meaning of literacy by exposing them to print. Additionally, it enables the teacher to initiate alternative teaching methods and to improvise on her teaching plan. Though all of them reported that it is beneficial for children to receive early literacy instruction, they were all of the view that kindergarten should not be a substitute for the first grade. Thus, it is suggested that kindergarten should have a preparatory role for primary school. However, they all reported that changes should also be made in the curricula of the 1st and the 2nd grade in order to renew their contents and follow the developments.

Though it was a curriculum introducing new aims in relation to early literacy, teachers did not receive any official guidelines regarding its implementation. This resulted in teachers interpreting the curriculum and its aims in their own way, and in not having a unified plan relative to what children should be aware of regarding literacy by the end of the kindergarten year. From their reports it was evident that the lack of guidance made teachers doubt the effectiveness of their teaching plans, though they seemed to convey the curriculum's deeper understanding. The contribution of the books supplied by the Pedagogic Institute to help teachers plan their teaching was controversial and the teachers' views on this differed. This may have been because, according to the three teachers, these books were not elucidating regarding the way the suggested tasks should be applied and they did not give any examples of these tasks in Greek but rather in Spanish. Nevertheless, teachers reported that despite preferring to develop their own tasks, which were designed according to children's skills and needs, they often referred to those books for ideas on their literacy teaching and sometimes was proven helpful.

Teachers' views on the parents' role and of home background in children's literacy were that it is very significant, because the literacy experiences children acquire

at home have a facilitatory effect on their literacy development. However, though all three teachers shared this view, teacher A reported that she would prefer parents not to interfere in their children's literacy learning, whereas teacher B said that it would have been better parents to be limited to teaching the alphabet and the directionality of print and teacher C to teaching how to write their names and hold the pencil. Specifically, they reported that the inconsistency in instruction between home and kindergarten is likely to cause difficulties in teacher's teaching plan and confusion to the children. This is why all of them said that there should be an effective collaboration between home and school context. Besides, children who have already acquired literacy at home would find what is being taught on literacy boring and it would be difficult for them to concentrate. Regarding parents' views on literacy, teachers reported that most of them did not know how to deal with children's literacy or they had very limited time for that due to their professions. However, according to teacher A some of them were of the view that literacy should be taught in primary and not in kindergarten, which undermined the teacher's work in kindergarten. Consonant with the teachers' views was what reception class teachers reported in Tizard et al's (1988) study. Specifically, they found that a quarter of 33 reception class teachers strongly disapproved of any attempts by parents to teach children how to read and write, whilst most of the rest had serious reservations about it. They were of the view that parents would use the wrong methods, and confuse the children, or put too much pressure on them, so that they lost interest (Tizard, 1993).

CHAPTER 12: Discussion

12.1 Introduction

Achieving literacy is one of the most important elements of children's education. Although there is a large body of research on early literacy where all the skills and knowledge required for attaining literacy have been explored, most studies concern the English language. It can be seen in previous chapters that the development of several areas (such as letter knowledge, phonological awareness, and concepts about print) is strongly associated with children's literacy acquisition, which, in turn, is a strong determinant of children's later performance in school (Bradley & Bryant, 1986; Goswami & Bryant, 1990; Treiman, 1993). However, although there is considerable evidence about early literacy development in an English speaking context, much less research has been done on this in the context of the Greek culture and language. Some aspects of literacy may be universal, but others might be language and culture specific. Comparing the findings of this study in Greek with data from other studies in English (e.g. Liberman, et al, 1974; Fox & Routh, 1975; Bradley & Bryant, 1983; Stuart & Coltheart, 1988; Goswami & Bryant, 1990; Adams, 1990; Clay, 1993, Treiman, 1994; Goswami et al, 1997) yielded significant data regarding Greek children's early literacy development and learning, and revealed some of the effects of the Greek language on children's literacy acquisition.

In Greece, formal schooling starts from the first grade of primary. Prior to this age, children are eligible to go to kindergarten (four- and five- years old), but this is not compulsory. Until September 1999, kindergarteners did not receive any formal and systematic literacy instruction there. However, the implementation by Government initiatives of new literacy policies affected Greek kindergartens and, since then, all kindergarten children receive early literacy instruction designed to help them develop their literacy skills at an earlier age. Nevertheless, kindergarteners are not expected to have already developed any skills in literacy on their entry into kindergarten, or to have reached any established criteria in their literacy skills by the end of the kindergarten year.

This chapter rehearses the aims of the research. Overall findings are presented in the light of the aims and related to current studies of early literacy development in the English and Greek language. Theoretical, educational, and research implications are discussed.

12.2 The aims of the study

The investigation was designed to explore kindergarteners' skills in the prerequisites of literacy (i.e. phonological awareness, letter knowledge, concepts about print) as well as in early reading and spelling. A longitudinal approach was taken to enable a study of development over time to be made. Examining Greek children's literacy development, the present study also aimed to relate the development of early reading and spelling skills to these precursors and explore the relation between all these skills and children's experiences of literacy. The analysis of children's literacy skills was also made in terms of kindergarten class, gender and age. Moreover, children's conceptualisation of their literacy learning through their experiences of literacy at home and in kindergarten was studied. Related to these, the study also explored the kindergarten context in which early literacy teaching takes place by investigating teachers' views on early literacy and their teaching practices. Historically, the study took place at a time when Greek kindergartens were being asked to deliver a new literacy curriculum.

12.3 Phonological awareness

The investigation of children's phonological awareness showed that some children's skills had been at a good level when they started off and therefore there was little room for improvement in the tasks designed for this study. These findings contradict both Bruce (1964), and Fox and Routh (1975), who found that children find phonological tasks difficult even after they have learnt how to read. Children in class C appeared to score significantly better than children in class A on PA at the beginning of the year but there was no sufficiently specified reason for this. It may have been that their experiences of literacy at home may have initiated the use of phonological awareness skills. According to children's reports there was no difference between children regarding

their literacy experiences in general. Nevertheless, over half of the children in class C reported that they had been shown the letter sounds or how to read and spell words before their entry into kindergarten. This may well have contributed to developing their phonological skills. Teachers B and C reported that during the kindergarten year they applied PA tasks in terms of their teaching plans, whilst teacher A did not. The children's reports on the literacy tasks applied by their teachers reaffirmed what the teachers said. Given that children in class C seemed to have an advantage in PA on entry to kindergarten it would have been anticipated that they may have scored at ceiling by the end of the study but they did not. Likewise children in class B could have shown signs of improvement but no progress was made. The children's performance was static. This may be because six months of instruction was not enough for kindergarteners to show any progress or it may be because the kindergarteners needed to receive more systematic instruction on PA in order to develop their skills markedly. Surprisingly, there were some children who regressed by the end showing that their skills were not yet secure. Further the analysis at the end of the study indicated that there was no difference between classes.

Exploring the performance on the two phonological awareness tasks individually, it appeared that the difference between classes was localised to the initial phoneme blending task, where children in class A appeared to have scored worse than those in C and in B at the beginning and at the end respectively. This difference in performance at entry to kindergarten must be attributed to the prior literacy knowledge of the children in class C. In children's reports on what they were doing at home regarding literacy, no references were made to tasks where blending skills were required. However, as mentioned above, they reported that their parents or other family members were showing them the letters and their sounds and how to read and write their names and words. This may suggest that generally, knowledge of the letters and children's literacy experiences help the development of children's PA. However, it would have been more informative for the interpretation of these results to have data on what parents were doing at home regarding literacy.

On the phoneme blending task, all three classes showed similar performance at both times. However, on investigating any signs of improvement it was shown that children in class B made a significant fall from T1, though, according to teacher B's

report, they had received some teaching on PA. This finding may suggest that children's phonological skills were not yet secure. Thus, the analysis indicated that, though teachers B and C reported that they had applied tasks relative to PA and it might have been expected that the children could have reached ceiling at the end of the study, children in class B scored worse than at T1 and those in class C showed no signs of improvement. Surprisingly children in class A who did not receive any instruction in PA scored similarly to the others. This may suggest that other elements of knowledge such as letter knowledge or children's experiences of literacy in general may have facilitated their PA skills. The influence that children's literacy experiences may have had According to teacher's A reports on her teaching practices, she placed an emphasis on letters and sounds and other general letter knowledge tasks. Also teachers B and C emphasised the teaching of letters and phonemes as well as of general letter knowledge. This knowledge might have helped also those children score on the phoneme blending task.

Where children showed good performance on PA tasks in the present study there is support for the study by Manolitsis (2002) study with Greek kindergarteners and the one by McClure et al (1996) study, but this contradicts the study by Aidinis & Nunes (2001) findings about kindergarteners, as well as the study by Papanis (2001) with first graders on their entry into primary school. The assessment of PA was made at phonemic level, which suggests that, although the manipulation of phonemes is considered harder than of syllables (e.g. Liberman et al., 1974; Lundberg et al., 1980; Treiman & Baron, 1981; Goswami & Bryant, 1990), children were developing an awareness of the smaller units before they were able to read. This is consonant with the suggestion by Walley (1993). This is known to be a good predictor of later reading success. As mentioned above, children's PA skills may have been actually facilitated by their letter knowledge or their dealings with literacy and this may be the reason for these tasks not being so hard for them. These findings imply an association between phonological awareness and letter-sound knowledge. Though the correlational analysis of the data at the beginning of the study did not show any association between letter sound knowledge and PA, at the end it was found that they were associated. Additionally, inferences can be made from children's performance about the way the Greek transparent orthography facilitates the development of their phonological awareness skills. Further the correlational analysis

indicated that at T2 PA was related to reading and spelling, which suggests that there may have been a reciprocal effect between them. Additionally, the analysis showed that PA at T1 was related to reading and spelling at T2. This means that those children with good PA skills had good reading and spelling performance.

However, as mentioned above, there were children who did not have secure skills in PA. This was also evident in the qualitative analysis of the children's performance on PA, where it was further found that there was an association between children's performance on PA at T1 and T2. Phonological awareness is not thought to be a skill that necessarily occurs automatically with its own developmental schedule. It can be developed by explicit teaching (Morais et al., 1979), or by learning to read (Wagner et al., 1994). However, as Stuart and Coltheart (1988) have suggested, these two ways are not necessarily contradictory. The present study showed that generally children's experiences of literacy may have an effect on their phonological skills.

Regarding training in PA, Tafa (2003) concluded in her study that it had an effect on children's performance, although they had not yet learnt how to read and write. Also, studies (e.g. Bradley & Bryant, 1983; MacMillan, 2002) have shown that phonological training combined with letter-sound teaching can lead to more positive effects on reading ability than phonological training only. The National Reading Panel Report (2000) in the USA illustrated that young children instructed in manipulating phonemes in words could also improve their phonemic awareness. Porpodas (1991) found that those children who had good phonological awareness skills during their time in kindergarten and before they learned how to read had good performance on reading at the end of the 1st grade. This is consonant with the results of studies in other languages (e.g. Content et al, 1986; Liberman et al, 1977; Lundberg et al, 1980). This shows that regardless of the orthographic system the relationship between PA and reading skills is a reality which is not coincidental or superficial but it appears to be connected with the way the oral language reflects written language (Porpodas, 2002, p. 253).

The lack of direct instruction in PA in the case of class A or the ineffective PA teaching plans, in case of classes B and C, may be some of the reasons why children's overall performance was static in the present study. Another reason may also be because more systematic instruction on PA was required in order for kindergarteners to show

some progress or it may be that six months of instruction was not enough for such young children. Gender and age (i.e. the older and younger children in this study) did not appear to have any influence on children's performance on PA. These results contradict the findings of Tzelepi (1997) regarding the differences between boys and girls in PA, and supports those of Tafa (2003). In relation to age, the present study supports the results of Porpodas (1992), who suggested that age was not amongst the factors that affected the children's performance on PA.

12.4 Letter knowledge

The assessment of children's letter knowledge was broken down into eight parts (i.e. letter name knowledge (lower and upper), letter sound knowledge (lower and upper), letter name knowledge composite score, letter sound knowledge composite score, lower case letter knowledge composite score, upper case letter knowledge composite score, general letter knowledge and identification of the initial grapheme).

The results of the investigation showed that overall, children had better knowledge of the letter names than of the letter sounds upon entry into kindergarten. This contradicts the study by Tafa (2003) about Greek kindergartners' letter knowledge, where she suggested that children at the beginning of the year have better knowledge of the sounds. The finding of the present study relates to what Clay (1991) found, namely that children's responses to letter identification tasks are firstly alphabetic, secondly words beginning with the letter and lastly (decidedly least preferred) the sound equivalents. Regarding this it could be suggested that children's experiences and dealings with literacy before they come to kindergarten may have facilitated children's letter name knowledge. This emphasises the importance of literacy experiences in children's literacy development. As Neuman et al (2000) have suggested that children need opportunities to develop these strands interactively and not in isolation. Meaning motivates children's earliest experiences with print, and not sounds or letters (Neuman & Roskos, 2005). However, the results at the end of the year showed that children's knowledge of the sounds increased, with them knowing the sounds better than the names. According to the children's reports most of them had been shown by their parents or other family members the letters and the sounds. The overall progress made was related to the performance of

the children in class C. Upon entry, children in class C had similar knowledge of the names and sounds, whilst in classes A and B children knew the names better than the sounds. Though by the end all three classes improved relative to their letter sound knowledge, children in C made marked progress, whilst in A and B children appeared to have similar knowledge of the names and sounds. According to the teachers' reports, teachers A and B said that they taught children both the names and the sounds. However, teacher C reported that she focused on teaching children primarily the sounds from the beginning of the year. This seems to provide a causal explanation of the performance of the children in class C on letter sound knowledge at the end of the study. This is also evident in the investigation made in the names and sounds in lower and upper case separately.

Regarding the letter names in lower case it was found that all three classes had similar levels of knowledge at the beginning. However, at the end classes A and B made marked progress and appeared to be better than at T1, whereas class C did not improve and this resulted in class C significantly differing from class B. In uppercase letters the results were similar to those in lowercase. The children in class B were significantly better in letter name knowledge than those in class C at the end, though there were no differences between classes at T1. These findings justify what was suggested above in relation to letter names. However, it is interesting to point out that detailed analysis in terms of class indicates that there was an instructional effect on the performance of the children in class B on letter names in uppercase at T2. This may suggest that the instruction given by teacher B relative to the alphabet letters may have facilitated children's letter name knowledge. Additionally, children's overall performance at the beginning showed that the fact that they knew some letter names before they received any kind of instruction, indicates the effect of the children's literacy experiences and the role of home background in children's literacy acquisition. According to children's reports on their experiences of alphabet letters before they come to kindergarten, a great number of them said that they had some knowledge of the letter names.

In relation to the letter sounds in lowercase, children in class C appeared to have significantly better knowledge than children in class A both at T1 and T2, and than class B at T2. Likewise, in uppercase letters class C did better than class A at both testing

times. The advantage children in class C had at entry over those in class A may have been due to prior knowledge acquired from their literacy experiences at home. According to children's reports, their parents or other family members were teaching them the letter sounds. In terms of class, only a few of the children in class A reported this. By contrast, those in classes B and C were the majority. However, it appeared from children in class C's performance that the instruction they received during their time in kindergarten capitalised on their prior knowledge, resulting in having marked progress and doing better than both classes A and B by the end of the year. Children's performance at the end of the study relates to what has been suggested by Stanovich (1986) in his theory about 'Matthew effects', that prior knowledge facilitates, enriches, and elaborates learning. As mentioned above, though all three teachers taught children the sounds, according to children's and teachers' reports, only teacher C said that she placed emphasis on letter sounds.

No ceiling effects were found in the investigation of children's letter knowledge, which means that, though they did not manage to learn all the alphabet letters by the end of the year, they did have some knowledge of the letters. This finding contradicts Manolitsis (2000) who showed in his study that Greek kindergarteners' letter knowledge was generally very poor, with nearly half of the sample scoring zero. These and generally the results of the present study are similar to the findings of Tizard et al. (1988), that children's letter knowledge was very poor at the beginning of the year. Specifically, this study found that, on average, children could identify five letters, although 12 per cent could identify at least twenty (Tizard, 1993). On the other hand, Savage et al. (2001) suggested that thirteen is the number of the letter-sounds that are necessary for a child to 'take off' and start developing his/her reading skills. The mean score for children in class C in relation to letter-sound knowledge at T2 showed that they knew at least 13 letters' sounds at both upper and lower case. This in relation to their reading performance, indicates that the suggestion made by Savage et al. (2001) about English language may also be seen in Greek.

Investigating further children's letter knowledge it was found that children had better performance on uppercase letter knowledge than on lowercase letter knowledge. This finding is consonant with the findings of the study by Tafa (2003) regarding

kindergarteners' better knowledge of the upper case than of the lower. This may have resulted from the fact that capital letters are predominant in the environmental print (e.g. signs, logos, labels, etc.), and therefore preschoolers are more familiar with uppercase letters than with lowercase, which are more likely to be seen in written texts. Additionally, it may have been the effect of the instruction received whereby emphasis was placed on uppercase letters. The reports of the teachers regarding the upper and lower case letters showed that they all focused on teaching the upper case letters both at the beginning and at the end of the study. However, teacher C reported that at the end of the year she also focused on teaching children the lowercase letters. Moreover, it should be noted that the literacy curriculum for Greek kindergarten suggests focusing on teaching kindergarteners first the capital letters until they learn all of them and start having dexterity in their writing. This was justified by the fact that uppercase letters are easier to distinguish as distinct units, and easier for young children to write because they are more linear (Curto et al., 1998). Thus, teachers were encouraged to teach children first the uppercase letters and only after they have learnt the uppercase they would continue with lowercase letters.

Assessing children's general knowledge of the alphabet letters, it emerged, as expected, that children had higher scores than those in names and sounds. This finding supports what Clay (1991) has suggested, that children's secondly preferred response to letter identification tasks is words beginning with the letter. Riley and Reedy (2003) suggest that it is important for children to understand that the alphabet letters are symbols that stand for the individual sounds and can be identified within words. Also the realisation that letters can be put together to make up words and form sentences which can carry a message, is an important indicator of successful reading later on. After all, young children develop alphabet knowledge most successfully when making their own connections, with support from an adult, in the task of reading and writing, and that direct instruction is beneficial only when it is matched closely to the child's developing capability and it is grounded in stimulating, meaningful activity (Riley & Reedy, 2003).

Relative to the different school classes, the analysis indicated that class C appeared to have better scores in general letter knowledge than class A in both upper and lower case and at both testing times. According to teachers' responses regarding their

teaching practices, all three teachers applied many tasks where general letter knowledge was required (e.g. a word that each sound starts with), as well as other word games. This was also verified by the children's reports on the literacy tasks applied by their teachers. Additionally, children's general letter knowledge may have resulted from their literacy experiences at home and later in kindergarten. According to children's reports on their literacy experiences at home, they said that they practised words and letters and they were being read to or told stories. In kindergarten, apart from the explicit early literacy instruction given (e.g. teaching the names and the sounds of the letters), children were also being read to, they could 'read' on their own the books from the library corner, they listened to songs, they took part in language games etc. All these experiences may have also influenced the development of their general letter knowledge. As Riley and Reedy (2003) have suggested it is very important for children to share books and stories, to make books and write letters, cards and notes because when young children are engaged in such activities jointly with adults and learn to use print for various purposes, their need to learn how to read and write and in turn 'decode' the print world and function effectively within it will constantly be reinforced. The performance of class C suggests that those children had acquired a great deal of general knowledge in relation to letters from their literacy experiences before they came to kindergarten. This advantage over class A at T1 was maintained at T2, maybe due to the instruction received and the experiences of literacy in kindergarten.

On the identification of the initial grapheme task children had good performance from the beginning, showing that they had the ability to isolate the initial grapheme in a set of words and identify the differences between them. However, there was not much room for improvement. Nevertheless, the analysis indicated that children's performance by the end was static, with them showing no progress. According to teachers' reports they all applied tasks whereby identifying graphemes in words and passages was required. However, children were found to have good skills in this before they received any instruction. Nevertheless, there is no specified reason for this.

The present analysis further indicated that gender and age did not have any influence on all the measures of children's letter knowledge. Although younger children

were considered less cognitively advanced, they did not differ from older kindergarteners.

12.5 Concepts about print

The exploration of children's bottom-up knowledge of CAP (technical skills) revealed that children appeared to have a moderate knowledge of the concepts under investigation at entry into kindergarten. Clay (1985) has argued that the understanding of the communicative function of print, and that text has its own conventions of format and layout (concepts about print) is one of the most essential steps on the path towards reading (Riley and Reedy, 2003). The fact that children had moderate entry skills in CAP means that their literacy experiences may have facilitated their reading technical skills and supports the suggestion by Stainthorp and Hughes (2000) that the acquisition of these concepts may well either result from incidental learning and modeling at home, or from any deliberate attempts to teach them directly. After completing six months from the first measurement, children were shown to have an overall progress in their scores on CAP. More detailed analyses identified that this progress was mostly related to the marked improvement made by children in class C. This finding supports the suggestion by Clay (1989) and Griffin et al. (1985) that children show progress in their CAP skills after they spend time in kindergarten with a skilled teacher. This further indicates a school effect on children's performance, which suggests that the instruction children in class C received helped them to develop their book handling skills, and elaborate on their knowledge about the directionality of print.

Teachers' reports of their teaching practices illustrated that all three teachers included in their literacy programmes the teaching of CAP. However, the analysis indicated that only class C made significant improvement. These results suggest that maybe children in classes A and B needed more systematic instruction on CAP. However, regarding children in class C's performance at the end of the year the correlational analysis indicated that there was significant association between children's scores in CAP and in reading. This association may suggest that children's knowledge of CAP at T2 may have also been increased due to the instruction they received regarding word decoding, resulting in their marked progress.

Investigating children's overall performance on CAP it was found that some children had ceiling scores at T1. However, only half of them had secure knowledge at T2, whilst the others regressed. This is supported by Clay (1989) who argued that, although children responded correctly to some items on the first assessment, their responses were not conscious. Riley and Reedy (2003) support that these understandings (CAP) develop slowly and very early in children's lives and continue until they are being engaged in meaningful activities at home and at preschool environment. Using three categories of knowledge (poor, intermediate, good) the investigation of progress showed that the majority of children were found to have achieved secure knowledge but a worrying 15% of the sample had poor knowledge of CAP throughout the year. Factors like gender and age did not seem to have any effect on children's performance on CAP.

In Greek studies (e.g. Varnava-Skoura, 1994; Panteliadou- Cheppaki, 1995) about CAP, it was illustrated that a large number of children at the end of the 1st or 2nd grade have not yet properly understood the 'technique' of reading (Tafa, 2000). This implies that these particular concepts appear to be hard for children and this may relate to the fact that some children in this study had not yet understood them. This may also relate to the suggestion made earlier by Riley and Reedy (2003). Concepts about print are considered one of the best predictors of children's learning to read (Riley, 1996a), and are very much related to the baseline assessments at the start of Key Stage 1 (Stainthorp & Hughes, 2000). However, as Ehri (1979) has suggested, knowledge of CAP may interact with reading, so that it exists both as a consequence and as a cause of further reading progress (Johns, 1980). The results of the correlational analysis of the present study support Ehri's suggestion.

12.6 Reading

A child's early success with the task of learning to read contributes to a positive start at school. Many studies have shown that low academic achievement is linked to low reading ability. In the present study, on assessing kindergarteners' reading skills at entry to kindergarten, half of the sample could not read, and none of them had developed 'expert' skills. However, it should be noted that Greek kindergarteners are not expected to be able to read by the end of the kindergarten year. Nevertheless, a large number of children were found to have developed 'emergent/novice' skills in reading, and only a

few were 'advanced/expert' readers. However, there is no specified reason for this. The correlational analysis indicated that there was significant association between reading and letter sound knowledge upon children's entry into kindergarten. This suggests that children's knowledge of the letter sounds helped them to apply letter-sound correspondences and identify some of the target words. Additionally, according to children's reports some of them had been shown how to read words at home prior to their entry into kindergarten. Thus, their literacy experiences at home may have contributed to the development of their reading skills. By the end of the year, and after six months of informal literacy instruction, the majority of the children showed marked progress and shifted to higher ability groups with a few of them being in the 'advanced/expert' group. However, there were children who regressed, showing insecure reading skills, with no improvement. Moreover, the analysis indicated that, from those children who were found to be able to read at least one word at the end, some had older siblings who knew how to read and spell, which suggests that older siblings may have had an effect on the young children's literacy acquisition and were good role models.

In class terms, the children in class C had already developed some reading skills at entry into kindergarten, and, as mentioned earlier, this may be related to their knowledge of the letters sounds and maybe to their prior literacy experiences acquired through their dealings with literacy games. According to the children's reports it may also have been the fact that some of them had been taught the sounds and how to read words at home. This advantage of children in class C was further evident at the end of the year. This finding relates to the theory about 'Matthew effects' of Stanovich (1986). The children's letter sound knowledge combined with the instruction given by the teacher C on word decoding elaborated their prior reading skills and resulted in performing better than the others. A body of research (e.g. Lundberg et al, 1980; Mann & Liberman, 1984; Bradley & Bryant, 1985; Content, Kolonsky, Morais & Bertelson, 1986; Cunningham, 1990; Byrne & Fielding-Barnsley, 1995) has illustrated that a literacy instruction programme based on sound knowledge and sound manipulation is likely to have a marked effect on children's phonemic awareness and, in turn, on their reading performance. Similarly, the National Reading Panel Report (2000) suggested that systematic phonics have a large effect on children's reading achievement scores in

contrast to less systematic and non-phonics programmes. Nevertheless, Bader and Hilderbrand (1991) argued that reading and writing ability does not appear suddenly. However it does not appear also only as a response to literacy instruction.

According to teachers' reports, teacher C applied tasks where children were required to decode words, which justifies children's performance at T2. By contrast, teachers A and B reported that they were aiming from the beginning of the year at teaching children to identify words visually and building up a sight vocabulary. This did not appear to be as effective as the instruction children received in class C. Additionally, though both teachers A and B said that they support the whole word approach, they appeared to have also applied phonics in their teaching plans. This contradicts what they reported regarding the whole word approach. Nevertheless, the investigation in relation to class further showed that by the end there were children in classes A and B who had developed emergent/novice reading skills and even one child who had advanced/expert skills. Though they did not receive any instruction on decoding in kindergarten, it appeared that they could score, which, in turn, may mean that the suggestion regarding the effect of letter sound knowledge and of the literacy experiences on reading may be evident in children's performance in classes A and B.

Gender did not have any influence on children's reading performance. However, the age factor appeared to have an effect on children's reading skills at the beginning of the year. Older children were found to have significantly better scores on reading than the younger group and it may have been expected that they would 'take off' by the end. Nevertheless, by the end, the younger group, though less cognitively advanced, improved their skills, and a few of them even developed 'advanced/expert' skills. Their progress resulted in there being no age effect at the end, with both groups scoring similarly. This further indicates that the instruction children received was beneficial, regardless of age. This supports the findings by Porpodas (1990) on the development of first graders' reading skills, where it was suggested that age does not seem to affect reading acquisition; rather, it is affected by cognitive factors. Also, Tymms et al (1997) argue that age does not affect reading progress. No matter the age, when the instruction received is effective, a slightly younger child is then able to acquire literacy just as well as older children. However, the results of some British longitudinal studies (e.g. Mortimore et al.,

1988; Tizard et al., 1988) contradict this, indicating that once established, the gap between achievers and non-achievers is maintained or widens throughout primary schooling (Riley, 1996a, p.7).

Additionally, the findings of the present study contradict those (e.g. Langer et al., 1984; Weinstein, 1968, 1969) who have found that younger children will experience emotional difficulties, or will be labelled as having a learning disability, and those (e.g. Barkley, 1995; Garner, 1991) who have claimed that they may be less advanced than the older ones in many cognitive skills that facilitate reading acquisition. Also, Blatchford and Plewis (1990) and McQuillan (1998) have suggested that those children who start learning to read early usually do better later.

The error analysis of children's reading indicated that at both assessments the response rate was low. Compared to children in classes A and B, children in class C made fewer errors. At the beginning of the year the predominant type of error made was the use of letter/letter segments as cues to help them read the target word. There were fewer times where children used the initial letters to identify the target word. Marsh et al. (1981) argued in their reading development model that initially the visual similarity is limited to the first letter. Additionally, many children were just pronouncing the sounds without blending them, and they were just naming the letters.

By the end of the year, children started using the final letters, or even both initial and final letters as cues to read. Weber (1970) found that readers use the letters at the beginning and end as distinctive features yielding significant information about a word's pronunciation. This finding is consonant with what was found in the error analysis of the present study and reflects the importance of the position of letters for word recognition. Stage and Wagner (1992), and McBride-Chang (1995), had asserted that the accuracy with which phonemes are identified depends on its position within the word, where initial and final phonemes are easier to find, and medial phonemes more difficult. Moreover, Duncan et al. (1997) and Goswami and East (2000) found that reading beginners were far better at identifying phonemes (initial/final) in words than at identifying rhyme units. This is consonant with what emerged in the present study. However, Watson (1998) provided evidence in her study that reading beginners can learn letter-sound

correspondences regardless of whether reading instruction is based on phonemes of the onset position only or on phonemes in all positions (Stuart, 1999).

These results are also supported by Stuart and Coltheart (1988) who suggested that 'beginning readers have constructed partial or incomplete visual word recognition units for some or all of the words in their spoken vocabulary before they are exposed to formal tuition in reading' (Stuart & Coltheart, 1988, p. 173). Thus, according to Stuart and Coltheart, when children are required to read single words, the errors they make incorporate those parts of the target word, the first or the first and last letters, which already exist in their memory. Additionally, they supported that the developmental change from the use of non-phonological to phonological errors coincides with the ability to pronounce at least thirteen sounds of the alphabet, which are necessary to 'take off' and start developing their reading skills, and with good phonological awareness in pre-school (Savage et al., 2001). Looking at children's in class C performance on sound knowledge and their early reading it could be suggested that they justify the suggestion by Stuart and Coltheart (1988). Children in class C had an average of 13 sounds in both upper and lower case, which may have helped them to develop their reading skills.

In sentence and text reading, children did not use any contextual information to help them identify the words. Predominantly they used graphic information, and only a few times partial/irrelevant information. This indicates that context did not help them identify the words; rather, they were trying to apply letter-sound correspondences to decode the written words. This finding supports what has been suggested by a body of research (e.g. Bradley & Bryant, 1983; Ehri, 1983; Fox & Routh, 1975; Liberman & Shankweiler, 1979; Morais et al., 1979), that before children begin to process any graphic cues in order to read words, they must acquire certain prerequisites, such as letter knowledge and phonemic awareness. Nevertheless, what occurred contradicts the suggestion by Stanovich (2000) that a reader who has poor word analysis skills might possibly depend on contextual factors in order to read. Children in the present study were found to have started paying attention to the words' graphic features. According to Ehri's reading development model outlined in the literature review, the majority of the children had reached the partial alphabetic stage where they start to use grapheme-phoneme

correspondences when trying to read, which, though in English will not necessarily be correct, in a transparent orthography like Greek there will be a higher level of accuracy.

However, another explanation of this is the suggestion from some studies (e.g. Goodman & Goodman, 1974; Harste, Burke & Woodward, 1982) that this ability emerges naturally out of children's literacy experiences as the oral language develops (Ehri, 1991), or as Ehri has suggested, 'even at this early stage children become able to identify print in their environment, which is the foundation for learning about the graphic system' (Ehri, 1991, p. 60). She further added that 'the repeated exposure to environmental labels and signs leads to the decontextualisation of print and to its recognition solely from graphic cues' (Ehri, 1991, p.61). Goodman (1980) also suggested that 'the transition from emergent literacy to conventional reading is a process in which understanding regresses and advances through many print encounters (e.g. story books, letters, lists and printed materials) before the move into conventional print processing' (Riley, 1996a, p. 7). According to children's reports they had a lot of dealings with literacy at home and in kindergarten. These experiences may have had an effect on children's ability to identify distinctive graphic features of words, which, in turn, may have had an effect on their reading.

12.7 Spelling

The investigation of children's spelling skills was broken down into four parts: spelling their names, spelling other names, spelling words, and spelling words correctly. On their entry into kindergarten a large number of children knew how to spell their names correctly, suggesting that this knowledge had been acquired at home with parents' help. Riley (1996) has suggested that children's ability to write their names is one of the best predictors of children's later reading success. Moreover, in the U.K., writing their names, writing alphabet letters, and spelling words, are some of the criteria used in the baseline assessment of early writing, which is part of BAS (Nutbrown, 1999). However, there is no baseline assessment in Greece, and children are not expected to have developed this ability either at the beginning or end of the year.

In order to investigate this further children were asked to report whether they knew how to write their names and who taught them. According to children's reports, the vast majority of them said that they had been shown how to spell their names by their

parents or, in the case of class C, by their teacher. However, there were also some children who reported that they were trying to copy their names from the tags on their drawers and this way they learned to how spell them. By the end, no marked improvement was made in children's knowledge of how to spell their names. Only thirteen children were found to have acquired this knowledge during their time in kindergarten, whilst some of them even regressed showing that they did not have secure knowledge. That there were a few children who could not spell their names correctly could be explained by the fact that in the early years children may have their own way to represent their names graphically, which may not be conventional or correct.

In terms of class, the analysis showed that at the beginning most of the children in class C knew how to spell their names, whereas 50% and over of those in classes A and B did not. At the end there was an increase in all three classes but it was not remarkable. Asking the teachers in relation to their instruction plans on teaching children how to spell their names it was found that only teacher C focused on teaching children how to write their names by asking them to copy their names. She also added in her report that there were some children who could spell their names upon their entry. Though it would have been expected that by the end of the year all children in class C would know how to spell their names, there were still some of them who did not. This suggests that the instruction given by teacher C may not have been so effective. Gender and age had no effect on children's performance.

Further, the analysis illustrated that there were a few children who were also able to spell names other than their own on their entry into kindergarten, suggesting that this knowledge had also been acquired at home through their literacy encounters. The increase in their number by the end of the year was not remarkable and, similarly to the beginning, all three classes had no differences between them regarding their performance. These findings suggest that the instruction all three classes received may have not initiated learning to spell other names. Children's knowledge of spelling other names had resulted from their experiences of writing at home with their parents or other family members. Boys and girls as well as younger and older kindergarteners scored similarly.

Exploring children's skills in attempting to spell words found that their overall scores were low at both times. Children started off having no differences between them.

According to their reports their dealings with writing at home included the copying of words from posters, signs, books and labels. This did not appear to have any effect on children's performance at T1. However, by the end of the year children in class C made marked progress and did better than children in classes A and B. On further investigation, it was indicated that, according to her report, teacher C was applying tasks where children were required to write small sentences and where she dictated words to them. This may have contributed to the development of children in class C's word spelling skills. By contrast, teachers A and B encouraged children to copy words, because they thought that children were not yet ready to spell any words. However, the results of the study showed that their plans appeared not to be so effective. Clay (1993) has assessed the number of words that a child can write in order to investigate his/her basic writing vocabulary. According to Clay this measure provides good knowledge of young children's writing skills and correlates well with other literacy measures, and she added that after that the teacher can investigate the way the children work in more traditional spelling tasks.

Following up the investigation of children's spelling skills, it was found that in spelling words correctly children's scores were also low. No differences were found between classes when they started. However, by the end of the year, children in class C had made marked progress and did significantly better than children in classes A and B, showing that they could successfully apply orthographic rules in their spellings. As mentioned above, the instruction children in class C received had an effect on developing their word spelling skills, which, in turn, resulted in scoring better than the others. Another suggestion for explaining children in class C's performance on spelling words correctly was that there might have been a relation between children's letter sound knowledge and their correct spellings. The correlational analysis justified the fact that there was an association between children's knowledge of the sounds and their skill in spelling words correctly. This shows that both the instruction children in class C received relative to spelling and their letter sound knowledge resulted in their performing better than the others. Gender and age had no effect neither on spelling words nor on spelling words correctly.

The Greek orthography is generally regular, particularly for reading. However, there are examples where spelling is not totally transparent. Specifically, there are some

examples where grammatical and morphological rules must be known in order to choose the correct spelling. Thus, although there are some spelling exceptions that make writing harder, children at this early stage started using orthographic rules in their spellings. According to Ehri's (1995) spelling development model presented in the literature review chapter, this phase is the 'transitional' when a young child has mastered the majority of spellings and the orthographic system is established, though s/he could still make many errors.

The error analysis showed that the response rate was low. Exploring the errors in each area of spelling under investigation, it was revealed that in spelling their names at entry, the most common type of errors children made were the 'phonetic' and 'non-phonetic', with also a few examples of 'reversed letters' errors and of 'additions of phonemes'. This suggests that in the first case although children could spell their names correctly, they had not yet ascertained the right direction of the letter-forms, and in the second case they heard more sounds than those of the word they were trying to spell. By the end, 'non-phonetic' errors became fewer, though 'phonetic' errors were still predominant. The fact that both 'phonetic' and 'non-phonetic' errors were evident in children's spellings supports the approach which proposes that children use a variety of spelling strategies and different types of information from the first levels of their spelling development (Treiman, 1993; Treiman, Cassar & Zukowski, 1994; Varnhagen, McCallum & Burstow, 1997). In spelling other names, 'phonetic' errors were again the most common type at the beginning. However, at the end, children appeared not to have made any 'non-phonetic' errors or 'reversed letters' errors, suggesting that phoneme-grapheme correspondences were applied in their spellings, and the letter-forms had become clearer to them.

The error analysis in spelling words showed that, similarly to the above, 'phonetic' was the most common type of error. At the beginning, children basically represented in their spellings the initial parts of the words, and gradually they were writing down the final or both the initial and final parts of the intended word. Stuart and Coltheart (1988) found in their study that children learned the phonetic spellings more easily because they had available such partial recognition units. In Greek a large number of words contain syllables with a consonant-vowel form and, according to Treiman

(1993), it is easier for young spellers to spell the initial consonants than the final ones. By representing both initial and final parts in their spellings, it is suggested that children had developed some of their spelling skills by the end of kindergarten. Additionally, in Greek, children can map the sounds on to letters more easily than in 'deep' orthographies such as English. Thus, it would be easier for Greek children to represent the sounds with graphemes and have meaningful spellings, though not orthographically correct, than for English children.

Relating these findings on spelling to those about reading, it could be illustrated that by the end of the kindergarten year, children managed to apply letter-sound and sound-letter correspondences, and to even use orthographic rules, despite Greek orthography being a little irregular relative to spelling (e.g. Harris & Giannouli, 1999; Aidinis & Nunes, 2001), and therefore less easy to predict the correct spelling when the writer does not know the orthographic rules. Bosman and Van Orden (1997) have suggested that in languages such as Greek there is an inconsistency in phoneme-letter relations, which is not found in letter-phoneme relations, and this inconsistency must be resolved by the relatively weak semantic-letter dynamic. Thus, in order for children to have the same level in reading and spelling, it is necessary for them to build a stronger meaning-spelling connection.

The asymmetry in the orthographic regularity of reading and spelling in Greek (as well as in Italian) suggests that learning to read will be much easier than learning to spell. This was indicated in Cossu et al.'s (1988) study, which showed that Italian children will progress more rapidly in reading than in spelling, whilst English children will progress more slowly (Thorstad, 1991). This is further supported by Porpodas (1991), who asserted in one of his studies with Greek first and second graders that Greek children find spelling more difficult than reading.

12.8 Interrelations between the precursors of reading and reading and spelling

The investigation of the interrelations between the precursors of reading and reading and spelling illustrated that children's letter sound knowledge was strongly related to their reading performance at the beginning and to both reading and spelling at

the end of the kindergarten year. These findings suggest that sound awareness, the skill to map the letters onto sounds is related to reading and spelling ability. This means that those children who had good sound knowledge were also good readers. This is consonant with what has been suggested in research studies regarding the role of letter sound knowledge in literacy in the English language, that is not language specific, but rather applies to all alphabetic scripts (e.g. Liberman, 1971; Fox & Routh, 1975; Ferreiro & Teberosky, 1982; Mann & Liberman, 1984; Backman et al., 1984; Ehri & Wilce, 1985; Bradley & Bryant, 1986; Stanovich, 1986; Stuart & Coltheart, 1988; Adams, 1990; Bialystok, 1991; Treiman, 1994; Riley, 1996; Watson, 1998; Stuart, 1999). Moreover, the analysis showed that children's letter sound knowledge was also related to all other precursors except letter name knowledge.

Relative to children's letter name knowledge, the analysis showed that it did not seem to relate either to reading or to spelling, which contradicts the suggestions of Gavel (1958), and Wells and Raban (1978). The contradiction may result from the fact that the Greek letter names, apart from a few exceptions, are complex because, unlike English, they are polysyllabic. The bits of knowledge taken from names and sounds are not being connected. Although English children can rely on their knowledge of the letter names in order to read and spell at the beginning, the same does not apply to Greek children. Children's skills in concepts about print at the beginning did not appear to associate with either any precursor, or reading and spelling. However, at the end of year, CAP were related to children's reading and spelling performance and their letter sound knowledge. This finding implies that children's knowledge of the basic conventions of written language is related to reading and spelling, but it cannot be suggested by the present analysis whether CAP may have a facilitatory effect on reading and spelling or vice versa. This supports Riley's suggestion (1996) that CAP is a precursor of reading, but also develops through encounters with print in the twin processes of early reading and primitive message writing.

Phonological awareness, though it did not seem to be associated with either reading and spelling or other precursors at entry to kindergarten, was found to have significant association with children's performance of reading and spelling words correctly by the end of the year. Thus, children's skills in phoneme manipulation

appeared to relate to reading and spelling acquisition in a similar way to letter sound knowledge. This is consonant with what Porpodas (1989) found in his study with Greek first graders. He found that those children who had good phonological awareness skills upon entry into 1st grade and before they learn how to read, had better performance on reading and spelling than those who had poor skills at the end of the 1st grade. Nevertheless, this difference was minimised by the end of the 2nd grade, suggesting that there is a large effect of PA on reading and spelling but it is not a long-term effect (Porpodas, 2002). Additionally, the findings by Porpodas (1989) showed that learning to read and spell facilitated the development of children's phonological awareness skills and the poor group in PA caught up. The association between letter-sound knowledge and phonological awareness at the end of the year gives further evidence that a good level of letter sound knowledge relates to reading and spelling. It may be that phonological awareness was achieved in the present study by the development of knowledge of the letter sounds. The importance of the relationship between phonological awareness and reading and spelling has also been suggested by a large number of English studies on reading and spelling (Morais et al., 1979; Lundberg et al., 1980; Mann & Liberman, 1984; Bradley & Bryant, 1983, 1985; Content et al., 1986; Read et al., 1986; Lundberg et al., 1988; Stuart & Coltheart, 1988; Cunningham, 1990; Goswami & Bryant, 1990; Byrne & Fielding-Barnsley, 1995; McBride-Chang, 1995; Goswami, 1999; Stainthorp & Hughes, 1999). Furthermore, Porpodas (1992) found that Greek children's PA is related to the level of their literacy attainment, which, in turn, shows that the relationship between the two is universal rather than language specific.

The investigation revealed that reading skills upon entry into kindergarten were strongly related to reading and spelling performance at the end of the year. This association supports the suggestion by Frith (1985) that reading is the pacemaker, and is present even when the spelling skill has not yet reached its basic form. Moreover, the association between reading and spelling was also suggested by several studies (Malmquist; 1958; Ehri and Wilce, 1987b). Ehri, (1980, 1997) and Gough et al. (1992) have suggested that this relationship is due to the similarities between the processes underlying reading and spelling. Moreover, Frith (1985) suggested that reading has a positive influence on spelling strategy and vice versa. Specifically, she suggested that the

utilisation of alphabetic knowledge first begins in spelling. When children write, they focus on the segmentational nature of the written word; thus, a segmentation strategy is more useful for spelling first than for reading. However, later on when spelling is at an alphabetic phase, children begin to make use of higher order orthographic strategies in reading. Hence, children are helped to produce orthographically correct output for words that have exceptional or non-phonological spelling by processing larger groups of letters as units (Stainthorp, 1989). On the other hand, Uhry and Shepherd (1993), though they found that there was an effect of spelling instruction to first graders on decoding and word learning, it occurred that this effect would be evident only if the instruction was structured to improve blending ability.

Moreover, the fact that children's performance on reading at T1 was associated with their reading at T2 and on spelling at T1 with spelling at T2 relates to what Stanovich (1986) has illustrated in his theory on 'Matthew effects'. However, spelling performance on entry was not related to reading at the end of the year, which means that although the reverse appeared to be an important association, this relationship does not seem to have any value. This contradicts what Morris and Perney (1984) found in their study on the correlation between first graders' invented spellings at the beginning of the year and reading at the end of it, and supports the view that reading and spelling are two distinct processes with many differences (Frith, 1980; Bryant & Bradley, 1980; Read, 1981). However, this contradiction may have resulted from the age difference between the two samples of these studies or the fact that spelling in Greek is irregular compared to reading, and knowledge of orthographic rules is required.

Furthermore, the relationship between the precursors of reading upon entry and performance in reading and spelling at the end of the kindergarten year, showed that only phonological awareness and letter sound knowledge were found to be associated with reading and spelling. Concepts about print and letter name knowledge were not related to either reading or spelling. These findings regarding concepts about print contradict what Gavel (1958), Wells and Raban (1978), and Riley (1996) have suggested in relation to the association of CAP with children's later reading performance. However, the explanation for this contradiction is that those studies investigated the association of CAP on entry to

school with later reading performance, whereas the present study explored this relation on entry to kindergarten using only six CAP items.

12.9 Child interviews

Children appeared to enjoy reading and, with some exceptions, to have a lot of experiences of dealing with printed materials on their own, as well as sharing books with their parents, siblings, and grandparents at home. Regarding this, McQuillan (1998) suggested in his study that children who manage to read before they go to primary school come from home backgrounds where books are available and children are read to. More importantly, those children's parents had not forced them to read nor had they tried to adopt any formal literacy instruction. Plenty of children's books, as well as all sorts of books, newspapers and magazines, comprised children's print environment at home, indicating that the richness of the stimuli, and the experiences of seeing their parents or their siblings reading, would stimulate their interest in written language, initiating more involvement with print. These are essential understandings in order for children to benefit from the more formal teaching of literacy (Riley and Reedy, 2003). Thus, according to children's reports, the parents and in many cases the siblings provided a rich-in-print home environment and were good role models. As Riley and Reedy (2003) have suggested children's engagement in meaningful literacy activities at home and in preschool environment is very important for children's literacy development.

Similar were the children's descriptions of the literacy stimuli and of their literacy experiences in the kindergarten context. Teachers read aloud to them and all children, with some exceptions, enjoyed it. Riley and Reedy (2003) argue that literacy knowledge can be acquired by children only through many pleasurable encounters with print. The importance of the literacy experiences has been pointed out in many studies (e.g. Stanovich & West, 1989; Cunningham & Stanovich, 1990, 1991; Stanovich, 1992; Stanovich & Cunningham, 1992; Echols et al, 1996; Riley, 1996; Stainthorp & Hughes, 1999; Riley & Reedy, 2003; Neuman & Roskos, 2005). Moreover, stressing the relationship between print exposure and reading, Cunningham and Stanovich (1997) suggested that those children who are poor readers are less exposed to print than good readers. This was also suggested earlier by Mason (1980), who claimed that children may

fail in their reading attainment if they do not have experiences of environmental print (Ehri, 1991). Neuman (2005) argues that any early literacy instruction that explicitly and systematically help children develop their conceptual knowledge base that underlies the meanings of words will also make much difference in overcoming the gap between children from low- and middle-income families. Moreover, Iturrondo (1985), in a study investigating the relationship between story-reading and the emerging knowledge of printed Spanish in preschoolers, found that children's performance on CAP was positively affected by story-reading (Clay, 1991). This illustrates the effect of literacy experiences and specifically of story reading on preschoolers' development of CAP.

It is interesting to note that even at this early age, when they were questioned about the purpose of reading, they had already realised that it is a means of taking the message that print conveys, of communication between people, of learning, of pleasure, and of information. Moreover, some children also stressed the importance of reading in other aspects of life, such as work, or the fact that it is a skill acquired only by humans that distinguishes them from animals. Regarding writing, children's views were similar to those about reading. They indicated its role in socialising, communicating with other people, working and learning. Furthermore, children suggested that literacy is a privilege of the adults, and they have the urge to acquire this skill because they want to be part of the adults' world. Their reports show that kindergarteners have understood the purpose of literacy and have realised its importance maybe through their experiences from home and school context. This further indicates that living in a world surrounded by print children observe adults' interactions with literacy and build up their views and attitudes according to their observations. This finding illustrates that children had acquired the most important prerequisite of literacy development, which is the understanding of the daily uses and the purpose of literacy. As Riley and Reedy (2003) have suggested until young children understand the nature and purpose of literacy there will be very little progress in their reading and writing skills.

Their responses regarding the time, place, and person who teaches them reading were influenced by their first experiences coming from their home. Thus, the prevalent view was that they would be able to read when they are older, and this would happen at home. However, children in class C seemed to have understood that literacy learning

takes place at school. The majority of children in classes B and C further reported that school is where people are taught to write by their teacher. Children in class B reported that reading should be taught at home and writing at school. The difference in their views is probably due to the fact that they think that writing is harder for them than reading, thus they may believe that they would need help from their teacher to learn how to write. It is worth indicating that children felt that they were too young to be learning literacy and that the majority of them were influenced by their home background, which was a dominant learning context until then. The school was a new learning context for them and they did not have any experience of it. However, children in class C appeared to think that literacy learning takes place only at school from their teacher. However, those children who reported that they had been taught literacy during their time in kindergarten said that they were ready and had the urge to learn literacy.

In relation to their practical experiences, children reported that they had more experiences of reading something on their own than of writing. In terms of class, no differences were found between classes relative to their experiences of reading, whereas of writing, though the results on children's performance were generally low, children in class C were found to have more experiences than the others. This shows that the children in class C were dealing with writing at home more often than the others, which suggests that this may be related to their performance on spelling tasks. Upon entry more children in class C knew how to write their names than in the other classes and this was verified by the children's reports that they had been shown how to write their names by their parents at home and their teacher in kindergarten. Moreover, according to children's reports at the beginning, some children from each class knew how to write some words. The empirical data showed that at the end of the study children in class C scored better than the others in attempting to spell words and spelling words correctly. This suggests that children's prior knowledge may have contributed to their performance at the end. Additionally, the interaction between children and family members may have contributed to the enrichment of their experiences.

In reading, most children asked for someone's help (such as their parents or other family members), but not in writing. This may be because children did not feel the necessity to conform to any rules in writing and because they believe they are able to

invent their own spellings, something that is not possible in reading. This may have been why the vast majority of children thought that reading was harder than writing. They had already realised that they needed some knowledge and skills, which they did not have, in order to crack the code. Moreover, according to children's reports children in class C had more experiences of learning how to read and write in kindergarten than the others. From the teachers' reports it was evident that only teacher C applied tasks of word decoding and of word spelling. The others, as mentioned above, limited their teaching relative to reading and spelling to children visually identifying words, building up a sight vocabulary and to copying words.

Taking into account what children reported at the beginning of the year regarding whether reading or writing was harder it appears that reading is considered more difficult than writing at the end. This is probably because they realised that reading was more than 'reading' the pictures or visually identifying the words. In contrast to the end, at the beginning children found writing more difficult than reading maybe because it needed more dexterity, which children did not yet have. Through their experiences during their time in kindergarten, children may have realised that they needed some knowledge of the sounds and skills such as the application of letter-sound correspondences in order to decode the written words and this is why they found reading harder than writing at the end. When children were asked whether they knew how to read, some children gave positive responses. From those most of them were from class C and very few from A and B. The analysis of children's performance reaffirmed children in class C's reports but it contradicted those of children in classes A and B where it was found that there were more children who could read at least one word. Relative to writing, with only one exception, children reported that they knew how to write. However, the empirical data showed that very few children were able to write at least one word. This suggests that there was a contradiction between what they reported and their performance on reading and spelling tasks.

The vast majority reported that they knew how to write their names and the alphabet letters, having learnt them basically at home, and in some cases, at kindergarten. This shows that both contexts initiated spelling experiences. However, another contradiction emerged between empirical data on spelling their own names task and

children's reports. Specifically it was found that a lot of children did not know how to write their name even at the end of the year. Regarding the difficulties, in writing, children said that the directionality of writing and the formation of lower case letters were hard for them. Relative to directionality of print, children appeared to have good knowledge of it in the CAP task. However, their reports showed that they had difficulties when these concepts had to be applied in writing. Specifically, they did not know from where to start writing.

In relation to children's reports on whether they enjoyed reading, it was also revealed that they knew how to behave like readers by the way they handled the books, they pretended to read, and they told stories in relation to the pictures in the book. This is an important finding regarding children's top-down knowledge of the concepts about print, which relates to children's literacy development. As mentioned earlier this knowledge is the most important prerequisite concept of children's literacy acquisition.

In the kindergarten context, children reported that their teachers had begun to teach them the names and the sounds of the letters. Additionally, there were children who said that they had also had learned how to read and write. Specifically, over half of the children in class C reported that they were learning how to read and nearly all of them how to write. Regarding the children in classes A and B, those who said that they learned how to read were very few, whereas those who reported that they learned how to write were 50 % and over 50% in class B and A respectively. In the case of class C most of the children's reports, though not all, reaffirmed teacher C's report regarding her literacy teaching programme. Nevertheless, the children in classes A and B who said that they learned how to read considered the teaching of visually identifying words as learning to read and of copying words as learning to write. Additionally, children's prevalent view on why their teacher was teaching them these was to prepare them for primary school, suggesting that children considered kindergarten as having an introductory role in their formal education. This may be why the prevalent view was that literacy should be better taught in primary school rather than in kindergarten. The children did not have any experience of primary school and their reports reflected the parents' and the teachers' beliefs on literacy teaching. This suggests that children's views as well as attitudes on literacy are influenced by their learning contexts. Moreover, analysing children's reports

it was found that there was a change in children's views regarding the place where literacy takes place. At the beginning, the prevalent view was at home, whereas at the end it was school. This supports what was mentioned above regarding the influence of the learning contexts on children's views.

Nevertheless, all children had the urge to acquire reading and writing skills, because, according to their responses, they wanted to write messages and letters to friends and family, or write their names, as well as to read their favourite fairytales and books. However, half of the children said that they did not have any experience of letter names and sounds or of how to read and write words from home, and what they learned at school was new to them. Specifically, according to the children's reports over half of them in classes B and C and only 1/3 of those in class A had explicit literacy experiences from home. Teachers B's and C's literacy programmes may have contributed to the development of the children in classes B's and C's prior knowledge resulting in those performing better than children in class A. Nevertheless, all children reported being read to which is also a literacy experience. This shows that children's self reports have to be always treated with caution. Shared reading or reading to children is an implicit literacy experience, which children do not realise, whereas learning the letters and the sounds is an explicit experience of literacy. However, regardless of their experiences, all kindergarteners enjoyed dealing with literacy and print and they even practised at home what they had learnt at school with their parents and other family members' help.

The parents seemed to be very supportive and encouraging to their children, according to children's reports. They praised children's efforts on literacy learning at home and supported teachers' plans relative to literacy, even though, according to children's reports, a great number of them thought that children were still very young for this. The fact that they were supportive indicated that children's home environment provided them with more experiences and stimuli to develop their literacy knowledge. According to the children, the parents' provision was usually teaching them how to write their names, the alphabet letters and some words; to copy short sentences; to recite the alphabet; and to play word games. This verifies what children reported regarding their prior literacy knowledge and some of the results of the empirical analysis. As Neuman and Roskos (1993) and Whitehead (1997, 2002) have suggested children's interactions

with family members and the teacher provide more and more challenging tasks, which require more sophisticated thinking and more involvement with printed material. These, in turn, affect children's literacy development. However, relative to children's experiences, Riley (1999) indicates that, 'although homes at all levels of socio-economic status and education offer many and varied opportunities for children to develop their understanding about spoken and written language, it appears to differ in the quality of the encounters and the extent to which they capitalised upon by the adults' (Riley, 1999, p.73). The study of Senechal et al (1998) showed that different kinds of literacy experiences are related to the development of different kinds of literacy-related skills (Riley, 1999).

Relative to the ethical issues regarding interviewing young children it could be said that the aim of the present research was to respect children's personality and voices and follow the ethical guidelines of BERA and of the Institute of Education. According to the regulations of the Greek Ministry of National Education and Religious Affairs (MNERA) and of the Pedagogic Institute, the researcher had to submit a full report of the aims and the plan of the research. Thus, prior to conducting the research project it was necessary for the researcher to have an official permission from these two institutions. However, parents were orally informed by the researcher and the class teacher about the project. If anyone of them did not wish his/her child to take part, s/he was free not to allow it. Before conducting the interviews, the children were informed about the content of the interview questionnaire and were asked whether they wanted to participate. Luckily for the researcher all the children found this project interesting and wished to take part. If there was a child who did not want to participate, there would not be any force. The children were left on their own devices to decide. Moreover, if anyone of the children felt uncomfortable during the interview or did not wish to respond or to continue, was allowed to withdraw, because the intention of the project was not considering the children as data donors and as research objects. This is consonant with the suggestions made by Wood (2005). Nevertheless, conducting individual interviews has both strengths and weaknesses. However, the researcher as a qualified early years practitioner was aware of how to sustain such a conversation and of avoiding the intrusion into the children's views and understandings.

Wood (2005) indicates in her work that in some research studies concerning young children exploitative or inappropriate methods for data collection were used, in which children are positioned as donors of data or depersonalized objects, rather than informed participants (Wood, 2005, p. 66). However, she reports that recent developments have led towards more respectful views about young children and more sensitive approaches to eliciting their voices and perspectives about issues that are of direct concern in their lives. Brooker (2001) refers in her work that a belief in children's rights (to be heard, to participate, to control their lives) and a belief in children's competence (to understand, to reflect and to give accurate and appropriate responses) are two of the principles underpinned by the United Nations Convention on the Rights of the Child (1989) (in Wood, 2005). Broadhead (2004) and Wood and Bennett (2001) suggest in their work that adults' perceptions of intent are only ever partial. Likewise the adults' perceptions of learning may also be partial where defined learning goals and curriculum content become the main indicators of progress and achievement (Wood, 2005, p.67). Recent studies (e.g. Pollard & Triggs, 2000; Wood, 2003) explored how children's voices can challenge dominant policy discourses about pedagogy, curriculum and assessment. In the study by Wood (2003) it was found that children's perspectives of the curriculum, their preferred teaching and learning styles and the gender differences in behaviour and achievement contradicted the teachers' assumptions about gendered preferences and challenged dominant pedagogical practices (Wood, 2005). In the present study what emerged from the children's responses relative to their literacy learning shows that they were not passive recipients of knowledge but active learners who had already formed their views and understandings of literacy.

The implications made by many research studies concerning interviewing young children (e.g. Graue & Walsh, 1998; Grieg & Taylor, 1999; Coady, 2001; David, Edwards & Alldred, 2001; Brooker, 2001; Wood & Bennett, 2001) suggest that the adult interviewer should continue to develop his/her skills and competence in engaging children as research participants in ways that reveal their knowledge, understanding, experiences, competences and unique perspectives (Wood, 2005).

As Wood (2005) indicates that research conversations which focus on children's contextualised thinking and activity offer potential for understanding children's

perspectives of how they experience the curriculum, how they interpret the meaning of adult-directed and child-initiated activities, and the outcomes in terms of the knowledge they acquire and the messages they receive about themselves as learners. Children should not be deceived in order to provide data, nor should they be positioned in relation to deficit theories or models of their competence. Children's voices should be heard and have more influence on policy and practice (Wood, 2005, p.75).

12.10 Teacher interviews

The investigation of teachers' views on early literacy illustrated that they believed that kindergarteners could be taught the bottom-up processing skills of literacy. However, teaching literacy in kindergarten should differ from teaching in primary. A well-designed teaching plan that stimulates all children's interest in literacy, and facilitates the development of their skills, is required in order to be effective. Saracho (1990) has argued that 'the teacher has a key role in providing an appropriate educational setting for literacy development as she is a curriculum designer and organiser of instruction' (in Guimaraes and Youngman, 1995). This is also highlighted in NRPR (2000) where the Panel suggested that the role of the teacher is of high priority, since the success of the instructional programme depends on the effective and creative teaching and on the appropriateness of the programme implemented in her classroom. All three of them said that play is the most appropriate means to immerse children in the world of print, and acquire the knowledge that would help them succeed in their later school performance. Nevertheless, according to the teachers' reports, their experiences of literacy (as well as other factors such as maturity, motivation, personality, and interest) have a strong influence on children's performance on literacy. They also said that literacy should be made to appear friendly to kindergarteners, and teachers should help them understand the meaning of literacy, which is not only a hard task for them but also not so familiar to them. This is supported by the view of Whitehead (2002), who indicated that the real basics of literacy must consist of purposes, motives, and understanding. An adult in early years settings needs to capitalise on children's early learning; to be sensitive to the stages that each child has reached; and to be aware of learning that has to occur for progress towards conventional literacy to take place (Riley & Reedy, 2003, p.79). All three

teachers' primary aim in designing their teaching plans was not to overload children and cause any frustration to them.

They started their teaching plans with tasks of low difficulty and gradually they raised the range. The content of the tasks was adapted according to children's skills and interests in order to make them friendlier and more challenging for them. Additionally, they all suggested that it is better to address the same tasks to all children, regardless of their age and of their prior literacy experiences, because there were of the view that all children would gain some knowledge, which would stimulate their learning and may develop their skills. Particularly about younger kindergarteners, all three of them said that, though they were less cognitively advanced, they put a lot of effort into completing the tasks and showed great interest in taking part. They also added that younger kindergarteners' participation in the tasks and the stimulation of their interest were more important than the results of their performance on literacy tasks per se. However, such differences between children make a teacher's work harder, because she has to balance those differences in order to teach literacy effectively. The results of the children's performance on literacy tasks showed that the instruction children received was beneficial for all children regardless of their age and helped to eliminate any differences between the older and the younger group.

Regarding the literacy experiences the teachers also reported that the more literacy experiences children have the more ready they are to receive systematic literacy instruction. Teacher B said that early literacy teaching could be beneficial for children in their later performance. However, though teacher A reported that the new curriculum was useful for kindergarteners, she expressed her doubts about its beneficial effect on the children's later school performance. All children had similar experiences of literacy at home. Having told stories to them or being read to them, as well as dealing with literacy games and printed material, are some of the experiences that the children had at home, according to their reports. Regarding the availability of literacy materials at school, the teachers reported that children had access to plenty of materials. The teachers based their programmes on these experiences in order to apply literacy plans which are as effective as possible for kindergarteners.

All three teachers thought that the role of home background in children's literacy is very important because, amongst others, the experiences children acquire at home have a facilitatory effect on their literacy development. Children need to understand and know the daily uses of literacy and this can be done by watching experienced readers and writers who can show how a text can be used within the child's particular context (Riley & Reedy, 2003). However, though all three shared this view, they had their doubts about parents' interference in their children's literacy learning. Specifically, teacher A reported that she would prefer parents not to interfere in their children's literacy learning at all, whilst teacher B said that it would have been better if the parents limited themselves to teaching the alphabet letters and the directionality of print and teacher C said that parents should teach children how to write their names and hold the pencil. They justified their views by saying that the discontinuity in instruction between home and kindergarten is likely to cause difficulties in teacher's teaching plan and confusion to the children. According to teachers' reports, this is why an effective collaboration between home and school context is required. Additionally, teachers were of the view that having children who had already acquired this knowledge at home would make literacy learning at school less interesting. These views contradict the suggestion by Stainthorp (1989) that teachers should not overlook the fact that some children are already familiar with reading and writing due to their home background, which may provide good role models.

Moreover, it is worth noting that there is a contradiction in teachers' views. Specifically, first they highlighted the importance of children's literacy experiences for the development of their literacy skills and then they were against parents' interference in children's learning. However, the teachers' opposition was confined to the children's learning of reading and spelling at home. Thus, according to the teachers' reports, parents cannot always provide good role models. Further, teachers were of the view that parents did not know how to deal with their children's literacy and they had very limited time for that due to their professions. According to teacher A some parents had said that literacy should be taught in primary school rather than in kindergarten. This, according to the teachers, undermined their work on literacy in kindergarten. The teachers' views in the present study are consonant with what teachers' put forward in the project of Tizard et al (1988) (Tizard, 1993). Regarding the parents' role Hannon and Nutbrown (1997) have

argued that much of the variation in children's early literacy achievement must be due to what parents do or do not do at home in the pre-school years.

Generally, their views on the currently implemented curriculum were that it is more effective than the previous one, which was stereotyped and focused on developing the pre-literacy skills. The new one develops their skills in literacy through tasks, facilitates the children's self action and broadens their thinking and their understanding of its meaning through exposure to print. It enables the teacher to initiate alternative teaching methods and to improvise on her teaching plan. Nevertheless, they were all of the view that kindergarten should not be a substitute for the 1st grade and the former should have a preparatory role for the latter. Additionally, they all said that the contents of the curricula of the 1st and 2nd grade should change, in order to have coherence in what should be taught regarding literacy from kindergarten until the 2nd grade. Nevertheless, the interpretation of its aims and its implementation by the teachers were made without receiving any official guidelines and this resulted in not having a unified plan relative to the desirable outcomes regarding children's literacy knowledge by the end of the kindergarten year. From their reports it was evident that this lack of guidance made the teachers doubt the effectiveness of their teaching plans, although they seemed to convey the curriculum's deeper understanding. As Riley (1996) has asserted, the efficacy in the way that reception teachers plan, structure, and implement high-quality learning experiences for children will depend on the teacher's level of knowledge of the literacy process.

The contribution of the books supplied by the Pedagogic Institute to help teachers plan their teaching was controversial and their views on this differed. This may have been because these books were not elucidating regarding how the suggested tasks should be applied and according to the three teachers they did not give any examples of these in Greek but in Spanish. This suggests that the decision on what should be taught and how depended solely on the teachers. This may have been one of the reasons for having differences in teachers' teaching plans and in turn in children's performance on literacy tasks. Nevertheless, the teachers reported that despite preferring to develop their own tasks, which were designed according to the children's skills and needs, they often

referred to those books for ideas on their teaching and sometimes they proved to be helpful.

Based on their views on the early literacy, teachers made their teaching plans accordingly. As Ehri (1991) has suggested, reading skill is not picked up simply through exposure to print but rather it needs instruction and practice in the prerequisites of reading. Investigating all three teachers' teaching plans it was found that there were similarities and differences between them. Regarding reading, teacher A aimed at teaching children how to identify words visually in isolation and in fairytale titles, words within lists and their names in order to build up a sight vocabulary. Similar was the aim of the teacher B's teaching plan relative to reading. However, she applied tasks that developed children's PA. Tasks on PA were also applied by teacher C who like the others aimed at children building up a sight vocabulary. Nevertheless, in contrast to the others, teacher C employed tasks on word decoding and she focused on the letter sounds. The empirical data on children's performance showed that class C did better than the others in word reading, indicating the effect of the instruction.

Understanding the importance of the letter knowledge in reading acquisition, they all placed emphasis at the beginning of the year on teaching children the alphabet letters and applied tasks on letter sound knowledge. Nevertheless, teacher C reported that she focused on the sounds. The analysis showed that class C had better sound knowledge than the others upon entry and they maintained this advantage because the instruction they received developed further their letter sound knowledge. These findings suggest that teacher C, in her teaching plan, related the letter sound knowledge to reading and this resulted in the children in class C scoring better than the others. Additionally, in terms of letter knowledge the three teachers applied tasks on identifying graphemes regardless of their position within words. The children's performance on this task was good at both times. Regarding CAP the teachers taught children the directionality of print. However, in terms of their teaching and according to what they reported, other concepts such as the sentence, the word and the letter were implicitly taught. The children's performance on the CAP under investigation was discussed in Section 12.5.

Regarding writing all three teachers focused on asking children to copy down words and their names and on practising children's dexterity. Particularly, teacher A

believed that the kindergarteners were very young to spell words. Nevertheless, teacher C applied tasks at the end where children were required to spell words and write small sentences that were being dictated to them. The empirical data showed that class C did better than the others on the spelling tasks, showing an instructional effect. The correlational analysis showed that children's letter sound knowledge and PA were associated with their reading and spelling. This suggests that the fact that teacher C laid emphasis on sounds and applied tasks on PA may have contributed to the development of children's reading and spelling skills. Relative to the letter case the teachers introduced children to the uppercase letters, because they were of the view that the children were more familiar with them. The reasons why, were that the environmental print was predominantly in uppercase and capital letters were easier to write, because they are more linear than the lowercase. This is consonant with what Meek (1993) has suggested (Tafa, 2001). However, the books administered to the kindergarten teachers by the Pedagogic Institute suggested that they should work on the uppercase letters until children have learnt nearly all the alphabet letters and start having dexterity in writing. Nevertheless, teacher C reported that at the end she taught children also the lowercase letters. However, the results from the children's performance illustrated that they did better in uppercase than in lowercase.

At the end of the year the content of the tasks remained the same, though the range of difficulty was raised, and more tasks were added in e.g. tasks of linguistic knowledge by teacher B. The teachers A and B's evaluation of the children's performance at the end was that there were children who could read and spell. The empirical data verified the teachers' reports. Moreover, teacher B added that those children who could read and spell had supportive families and older siblings that were already in primary school. The analysis indicated that out of the seven children in class B who were found to have read at least one word at the end, only two had older siblings. The rest of them had younger siblings. Regarding class A out of the six children who could read at least one word only two had older siblings, whereas in class C out of the twelve children found to read, only six had older siblings. This finding contradicts teacher B's suggestion. By contrast, teacher C reported that she had not noticed any children who could read and spell in her class. The empirical data contradicts this. This

may suggest that when a teacher does not evaluate very carefully the ability level of her class, it is possible that she will make wrong decisions and apply an unsuitable teaching plan.

In Greek kindergartens, as the present data has shown, the subjective interpretation of the national curriculum by the teachers and the lack of stated desirable outcomes may have resulted in having differences between the literacy teaching plans implemented in the three kindergarten classes, which, in turn, led to having differences in performance between the three classes.

12.11 Educational implications

It has been demonstrated in the present study that the prerequisites that have been shown to associate with early reading and spelling performance in the English language (namely, phonological awareness, letter knowledge and concepts about print), have the same association to children's very early literacy acquisition in the Greek language. Therefore, it could be recommended that early literacy teaching plans should focus on developing and elaborating children's literacy-related skills, as well as enriching their prior literacy experiences, acquired at home, by exposing them to print and stimulating their interest in written language.

The findings of the present study show that at this young age the participating children, before receiving any formal literacy instruction, came to kindergarten having developed some literacy skills through their experiences of literacy at home. The children's reports showed that nearly all of them had similar experiences of dealing with printed materials and being read to at home. However, any differences that occurred between the three classes in respect to their early literacy skills by the end of the year were either due to the informal instruction received during their time in kindergarten or in some cases due to the fact that the instruction elaborated on children's prior knowledge.

The teaching plans applied by the three teachers had similarities and differences. They were similar e.g. in teaching the names and the sounds of the letters, in reading to or narrating stories to the children, in playing literacy games, in engaging children with literacy material, in teaching the directionality of print, in teaching children to build up a sight vocabulary and to copy words. Another similarity between teachers' B and C

literacy programmes was the application of phonological awareness tasks. The difference between the three teaching plans was that teacher C focused more on the sounds and she applied tasks on word decoding and on word spelling.

The fact that teacher C related these skills and focused on developing them was evident in the class C children's performance. They were found to be performing at a higher level at the end in some tasks such as CAP, writing words, writing words correctly, reading, than the children in classes A and B. Thus, it could be argued that they would be at an advantage in the first grade. This advantage has resulted from the instruction they received from their kindergarten teacher. However, it could be suggested that the provision by the family for literacy might have also affected children's literacy skills. Nevertheless, the families' provision is not sufficiently specified. However, from the fact that children in class C had better phonological awareness skills than the others from the outset and teacher C included PA tasks in her teaching plan, it might have been expected that those children could have reached ceiling, but their performance was static. This may have been because six months of instruction may have not been enough for kindergarteners to show any improvement or they may have needed more systematic instruction on PA in order to develop their skills markedly.

Likewise, children in class B might have been expected to score at ceiling, since they received instruction on PA, but similarly to class C their performance was static. Additionally, the instructional effect was also evident in the performance of class B in letter name knowledge in uppercase. It was found that children in class B had better knowledge of the names than the others by the end of the year. Though she reported that she taught both the names and the sounds, teacher B focused more on teaching children the letter names. The family's provision might have also affected children's letter name knowledge, but it is not sufficiently specified.

Amongst the implications that could be drawn from this is that kindergarten teachers should include in their literacy teaching plans tasks: a) that introduce children to phonological awareness; b) that emphasise letter sound knowledge; and c) where children deal with reading and spelling. Moreover, kindergarten teachers should help children develop the fundamental, essential and motivating understandings that will ensure that children will understand the daily uses of literacy and will have a positive attitude

towards the meaning making and the aspects of books and print. These will enable children to acquire the prerequisite skills that are necessary to develop more their reading and spelling skills later in primary school, when they receive formal and systematic literacy teaching. Related to this, Byrne and Fielding-Barnsley (1991) concluded in their study with English children that for young children at the age of four and five years both letter-sound knowledge and phonemic awareness are required for acquiring the alphabetic principle.

Nevertheless, emphasis should be placed on the way these tasks are presented and implemented. This means that these tasks would be incorporated into activities that combine play and learning. Roskos (1982) argued that play as a process in and itself provides a particularly rich medium for children's exploration of literacy: its cultural roles, routines, scripts and tools (Neuman and Roskos, 1992). Several studies (e.g. Roskos, 1987; Vukelich, 1989; Neuman and Roskos, 1990a; Morrow, 1990a; Neuman, 1991) have illustrated that children's collaborative engagement in literacy through play may provide substantive input in their learning about written language as reflected in their discourse. Within an enriched play environment children incorporate literacy objects and roles into their play, creating new play themes to express their ideas about literacy. In the process of play the nexus of objects-roles-contexts provide a network immersing children to the language and literacy actions, while simultaneously enhancing the quality of their literacy-based play (Neuman and Roskos, 1992, Roskos and Christie, 2000). Moreover, Neuman and Roskos argue that children's functional engagement with literacy objects in play settings may serve an important role in their early attempts to acquire literacy. Through play, children may explore the cultural tools of literacy, making them a functional and valued part of their own experience.

This further underlines the importance of the role of the kindergarten teacher, who works as a designer and as an organiser, as Saracho (1990) has asserted, and of the curriculum that is implemented. When kindergarten teachers plan their literacy teaching programme, they have to bear in mind that they are required to teach literacy through play, to improvise on their teaching in order to make literacy appear more interesting and challenging, and to apply tasks that serve children's needs and are consonant with their abilities, in order not to frustrate and discourage them. However, they should also take

into consideration that all children in a classroom should receive the most effective literacy instruction and should develop to some extent their literacy skills by the end of the kindergarten year in order to give them at least a head start in formal literacy learning in primary school. Individual differences between kindergarteners would never be eliminated, because other factors also affect children's literacy learning. The aims imposed by the curriculum should be very explicit, and guidelines should be given to the teachers regarding how the curriculum should be applied, in order to serve its aims and be more effective in children's successful literacy learning.

Moreover, amongst the findings of the present study was that relative age, except from reading upon children's entry into kindergarten, had no effect on children's performance on literacy tasks showing that there was no difference between younger and older kindergarteners. However, it is worth noting that, although there were children who differed from others for more than 12 months, the mean age difference between the two age groups was 6 months and this might be the reason for not having differences in their performance. Nevertheless, even when there were some differences between these two groups regarding their performance at the beginning of the year, the instruction the groups received during their time in kindergarten eliminated them by the end of the year. Thus, the instruction had a beneficial effect on the performance of the two age groups. This enables inferences to be made about the fact that teachers should implement the same literacy plan to all kindergarteners regardless of age without having any expectations regarding their performance. This would ensure that children receive the same level of instruction at school context in respect of early literacy before they begin primary school.

Furthermore, another conclusion drawn from the present study was that although there is now a national curriculum regarding literacy for kindergarten, the teachers appeared not to refer to the early literacy syllabus in respect of planning their teaching. The teachers preferred to apply their own literacy teaching plans based on their beliefs on how early literacy should be taught and on what knowledge and skills children should develop in respect to literacy. This may have led to having kindergarteners who had reached different levels of ability regarding the aspects of literacy by the end of the kindergarten year and this, in turn, suggests that they would start off in primary school

having differences in their literacy knowledge and in their later performance. Teacher C implemented a teaching plan that served the aims of the curriculum, focused on developing further children's letter sound knowledge and their word reading and spelling skills, and worked on relating these aspects of literacy. This may have resulted in her class having better performance than the other two classes. Thus, the fact that the teacher C taught children what the aims of the new curriculum imposed may suggest the effectiveness of the new curriculum regarding early literacy.

It has also been suggested that children's experiences of literacy, and of dealing with it, are one of the most important parts of literacy development that both the school and home context should foster, so that children can develop their understanding of literacy and build up their skills. As demonstrated by the children's and the teachers' views, parents and home background play a significant role in children's literacy development, and an effective collaboration between home and kindergarten should be initiated. Parents should be aware of the curriculum and its aims, and how they should make provision for their children's literacy learning in the most appropriate way that, above all, does not oppose the teacher's teaching practices. Therefore, teachers are required to inform parents about the importance of early literacy in children's later schooling, and suggest to them the right way to deal with their children's literacy at home. However, a teacher should also take into account in her teaching plan the socio-economic status of children's home background, their native language, and their ethnicity.

12.12 Methodological implications

One of the methodological issues that occurred in the present study was that a balance had to be achieved between a large number of stimuli in the literacy tasks and straining children too much. Investigating children's early literacy level across a wide range of skills balanced against the number of trials would yield more information about children's literacy knowledge during their time in kindergarten. Testing only a small number of stimuli in order for children not to get overloaded may have resulted in not covering the extent of their literacy skills. Nevertheless, Stage and Wagner (1992) have said that children's word decoding skills are so rudimentary at this early stage that very

limited information can be obtained from the analysis of their reading performance. However, in the present study there were no ceiling effects, which suggests that more testing items would not have added any more data on children's reading performance. Moreover, it would have been very interesting to investigate further children's performance by conducting a follow-up study, in order to make a more sophisticated exploration of the effect of early literacy learning on children's performance in the 1st grade (and later on in primary school), and study whether there is any similarity between what has been suggested about the short-term and long-term effects of early literacy on later schooling in the English context, and in the Greek context after the implementation of the new curriculum for kindergarten.

Furthermore, significant data would be yielded about children's literacy if their home background could be investigated. However, it is worth noting that parents' views on early literacy and their provision for it were investigated through self-completion questionnaires. Nevertheless, though the questionnaires were administered twice the response rate at the end of the year was very low, resulting in not eliciting valid data.

12.13 Conclusion

Investigating children's literacy development in Greek kindergartens, it emerged that the phonological awareness, letter knowledge and concepts about print, known to relate to early reading and spelling performance in English language, have the same relation to children's very early literacy acquisition in Greek language. This suggests that this association is universal and not language specific. Further the analysis indicated that the literacy-related skills were not only related to the children's fledgling reading and spelling ability but they were also interrelated. This means that there was also an association between the prerequisites of literacy.

The children in the present study were found to have developed some early reading and spelling skills by the end of the kindergarten year and before they receive any formal literacy instruction. More importantly there were kindergarteners who had 'advanced/expert' ability in reading and spelling before they go to primary school. The instruction that the children in each class received during their time in kindergarten appeared to have a strong effect on their performance on literacy tasks, or in some cases,

to elaborate on children's prior knowledge. The instructional effect was evident in a number of tasks. Specifically, children in class C were found to be performing at a higher level than the children in classes A and B in most of the tasks. The children in class C had an advantage over the others, when they started off, in letter sound knowledge, in phonological awareness and in spelling their own names due to the prior knowledge, and in CAP, spelling words, spelling words correctly and in reading due to the informal instruction they received from their kindergarten teacher. Teacher C implemented an advanced plan of early literacy instruction, which included tasks on phonological awareness, letter sound knowledge and on word reading and spelling. This enabled children in class C to show a better performance than the children in classes A and B. Nevertheless, it should be noted that there were individual differences between the children in class C which the received instruction could not iron out.

The investigation of children's literacy experiences both from home and kindergarten indicated that all children had similar experiences in dealing with literacy and printed materials. Regarding the methodological issue of interviewing young children it could be said that amongst others the aim of the present study was to respect the children's personalities and perspectives. The kindergarteners reported their views and opinions in semi-structured interview in which they were free to reveal their understandings of literacy learning, without any adult intrusion. This is consonant with the suggestions made by Wood (2005) relative to the methodological and ethical considerations when interviewing young children. What emerged from the children's reports showed that their exposure to print had a significant effect on their literacy development. Children's dealing with print and their experiences acquired at home and in kindergarten helped them to understand the meaning and the purpose of literacy learning. Related to this, Whitehead (2002), Riley and Reedy (2003), Neuman (2005), Neuman and Roskos (1992) have indicated that the real basics of literacy must consist of purposes, motives and understanding. Also Ferreiro and Teberosky (1983) argued that children learn about print by making hypotheses about the written language around them. However, as Taylor and Logson (1986) have said, 'what children learn depends on the quality of the literacy environment to which children are exposed (in Guimaraes and Youngman, 1995, p.41). Riley (1999) supports this by indicating that though homes at all

levels of SES and education offer many and varied opportunities for children to develop their understanding about spoken and written language, it appears to differ in the quality of the encounters and the extent to which they capitalised upon by the adults. Regarding the relation between exposure to print and children's early literacy skills Cunningham and Stanovich (1997) argued that there is reciprocal influence that exposure to print itself has on the development of cognitive processes. Although in Greek culture reading novels may not be in a daily routine as in English culture, reading newspapers and magazines, as well as other kinds of printed materials, is part of Greeks' daily life. This is evident in the children's reports. These findings suggest that the differences between the children concerned the literacy-related skills. On some tasks children's prior knowledge may have had a significant effect on the development of their literacy knowledge. Nevertheless, the teachers' literacy plans that initiated the development of children's literacy related skills had an effect on children's performance on most tasks.

The way that these skills and experiences will be built up, and to what extent depends on the kindergarten teacher's views and attitudes towards early literacy, which, in turn, have an influence on designing and organising her literacy teaching plan. Kindergarten teachers should be well aware of the teaching objective, of the aims of the national curriculum regarding literacy and should implement an instructional programme that serves those aims, it is consonant with children's needs, and it is effective for kindergarteners. Further, related to children's literacy development is the home environment, where children acquire their first knowledge of literacy. However, the present study does not provide any evidence of parents' views and practices regarding early literacy at home. This might have shed more light on young children's literacy development. Nevertheless, it also emerged that the home and school need to collaborate and not to have inconsistencies regarding their practices. Parents should be aware of the aims of the national curriculum and should take part in their children's literacy learning provided they do it in the most appropriate way.

The analysis of the present data further provided evidence that gender and age had no effect on the children's performance on literacy tasks. Although there was an age effect on children's performance on reading upon their entry into kindergarten, the received instruction worked to the same level for all, so that by the end of the year the

younger children were performing at the level of the older ones. This can be considered positive in terms of the profile of children entering primary. However, it could conversely be argued that the older children did not make the progress that might have been expected from them. Related to this, Yopp and Singer (1985) have suggested that ‘the role of mental age is not one of limiting what a child can learn but of limiting the ways in which they can be effectively taught’ (Adams, 1990, p.59)

It is clear that the research in beginning reading and spelling in many different languages has made much progress in recent years. However, there is much more research that needs to be conducted regarding the domain of early literacy and especially in terms of the Greek language. The present study is simply a tiny piece in the huge field of research on early literacy. Nevertheless, despite its weaknesses, it is hoped that this study might give impetus to a more extended research on early literacy in the Greek language.

REFERENCES

- Adams, M. J. (1990). *Beginning to read: thinking and learning about print*. Cambridge, Mass.; London: MIT Press.
- Aidinis, A., Nunes, T. (2001). 'The role of different levels of phonological awareness in the development of reading and spelling in Greek'. *Reading and Writing: An Interdisciplinary Journal*, 14, 145-177.
- Anderson, R.C., Hiebert, E. H., Scott, J.A. and Wilkinson, I.A.G. (1985). *Becoming a Nation of Readers: The Report of the Commission on Reading*. Urbana, IL: University of Illinois, Center for the Study of Reading.
- Backman, J., Bruck, M., Hebert, M. and Seidenberg, M.S. (1984). 'Acquisition and use of spelling-sound correspondences in reading'. *Journal of Experimental Child Psychology*, 38, 114-133.
- Bader, L. and Hilderbrand, V. (1991). 'An exploratory study of three to five years olds' responses on the Bader Reading and Language Inventory'. *Early Child Development and Care*, 77, 83-85.
- Baker, L., Fernandez-Fein, S., Scher, D. and Williams, H. (1998). 'Home experiences related to the development of word-recognition'. In J. L. Metsala and L. C. Ehri (eds), *Word recognition in beginning literacy*. London: Lawrence Erlbaum Associates Publishers.
- Balian, E. S. (1988). *How to design, analyse, and write doctoral or masters' research*. Lanham: University Press of America.
- Barkley, R. A. (1995). *Taking care of ADHD: The complete authoritative guide for parents*. New York.
- BERA (British Educational Research Association) (2004). Revised Ethical Guidelines for Educational Research. www.bera.ac.uk.
- Bialystok, E. (1991). 'Letters sounds and symbols: Changes in children's understanding of written language'. *Applied Psycholinguistics*, 12, 75-89.
- Biemiller, A. (1970). 'The development of the use of graphic and contextual information as children learn to read'. *Reading Research Quarterly*, 6, 75-96.
- Blachman, B.A. (1984a). 'Relationship of rapid naming ability and language analysis skills to kindergarten and first-grade reading achievement'. *Journal of Educational Psychology*, 76, 610-622.
- Blatchford, P., Burke, J. Farquhar, C., Plewis, I. and Tizard, B. (1987). 'Associations between pre-school reading related skills and later reading achievement'. *British Educational Research Journal*, 13, 15-23.
- Blatchford, P. and Plewis, I. (1990). 'Pre-school reading-related skills and later reading achievement: further evidence'. *British Educational Research Journal*, 16, 425-428.
- Bosman, A. M.T. and Van Orden, G.C. (1997). 'Why spelling is more difficult than reading'. In C.A. Perfetti, L. Rieben and M. Fayol (eds), *Learning to Spell: Research, theory and practice across languages*. London: Lawrence Erlbaum Associates.
- Bradley, L. and Bryant, P. E. (1983). 'Categorising sounds and learning to read-a causal connection.' *Nature*, 301, 419-421.
- Brennan, F. and Ireson, J. (1997). 'Training phonological awareness: a study to evaluate the effects of a program of metalinguistic games in kindergarten'. *Reading and Writing: an Interdisciplinary Journal*, 9, 241-263.

- Bruce, D.J. (1964). 'The analysis of word sounds'. *British Journal of Educational Psychology*, 34, 158-170.
- Bruck, M. and Waters, G. (1988). 'An analysis of the spelling errors of children who differ in their reading and spelling skills'. *Applied Psycholinguistics*, 9, 77-92.
- Brugelmann, H.J. (1986). 'Discovering print: A process approach to initial reading and writing in West Germany'. *The Reading Teacher*, 40, 294-298.
- Bryant, P.E. and Bradley, L. (1980). 'Why children sometimes write words which they do not read'. In U. Frith (ed), *Cognitive processes in spelling*. London: Academic Press.
- Bradley, L. and Bryant, P.E. (1983). 'Categorising sounds and learning to read-a causal connection'. *Nature*, 301, 419-521.
- Bryant, P.E., Bradley, L. MacLean, M. and Crossland, J. (1989). 'Nursery rhymes, phonological skills and reading'. *Journal of Child Language*, 16, 407-428.
- Bryant, P. E., Bradley, L & Maclean, M. (1990). 'Rhyme, language and children's reading.' *Applied Psycholinguistics*, 11, 237-252.
- Bryant, P. E. (1998). 'Sensitivity to onset and rhyme does predict young children's reading: a comment on Muter, Hulme, Snowling and Taylor (1997).' *Journal of Experimental Child Psychology*, 71, 29-77.
- Byrne, B. and Fielding-Barnsley, R. (1991). 'Evaluation of a program to teach phonemic awareness to young children'. *Journal of Educational Psychology*, 83, 451-455.
- Chaney, C. (1992). 'Language development, metalinguistic skills and print awareness in 3-year old children'. *Applied Psycholinguistics*, 13, 485-514.
- Clay, M. M., Gill, W.N., Glynn, E.L., McNaughton, A.H., Salmon, K.W. (1976). *Record of Oral Language*. Wellington, New Zealand: New Zealand Educational Institute.
- Clay, M. M. (1979). *Reading: the patterning of complex behaviour*. Auckland; London: Heinemann Educational.
- Clay, M. M. (1989). 'Concepts about print: In English and other languages'. *The Reading Teacher*, 42 (4), 268-277.
- Clay, M. M. (1991). *Becoming literate: the construction of inner control*. London: Heinemann.
- Clay, M. (1993). *An Observation Survey of Early Literacy Achievement*. Auckland (NZ): Heinemann.
- Cone, J. and Foster, S. (1993). *Dissertations and theses from start to finish*. Washington: American Psychological Association.
- Cohen, L. and Manion, L. (1994). *Research methods in education*. London: Routledge.
- Content, A., Kolinsky, R., Morais, J. and Bertelson, P. (1986). 'Phonetic segmentation in pre-readers: Effect of corrective information'. *Journal of Experimental Child Psychology*, 42, 49-72.
- Cossu, G., Shankweiler, D., Liberman, I.Y., Katz, L. and Tola, G. (1988). 'Awareness of phonological segments and reading ability in Italian children'. *Applied Psycholinguistics*, 9, 1-16.
- Crone, D. A. and Whitehurst, G. J. (1999). 'Age and schooling effects on emergent literacy and early reading skills'. *Journal of Educational Psychology*, 91, 604-614.
- Crosser, S. L. (1991). 'Summer-birth date children: kindergarten entrance age and academic achievement'. *Journal of Educational Research*, 84, 140-146.
- Cunningham, A.E. (1990). 'Explicit versus implicit instruction in phonemic awareness'. *Journal of Experimental Child Psychology*, 50, 429-444.

- Cunningham, A. E. and Stanovich, K. E. (1990). 'Assessing print exposure and orthographic processing skill in children: a quick measure of reading experience'. *Journal of Educational Psychology*, 82, 733-740.
- Cunningham, A. E. and Stanovich, K. E. (1993). 'Children's literacy environment and early word recognition subskills'. *Reading and Writing: an Interdisciplinary Journal*, 5, 193-204.
- Cunningham, A. E. and Stanovich, K. E. (1993). 'Children's literacy environments and early word recognition subskills'. *Reading and Writing: an Interdisciplinary Journal*, 5, 193-204.
- Cunningham, A. E. and Stanovich, K. E. (1997). 'Early reading acquisition and its relation to reading experience and ability 10 years later'. *Developmental Psychology*, 33, 934-945.
- Curto, L.M, Morillo, M.M. and Teixido, M.M (1998). Γραφή και Ανάγνωση II. Αθήνα. ΟΕΔΒ.
- Daneman, M. (1991). 'Individual differences in reading skills'. In J.Barr, M. Kamil, P. Mosenthal and D. Pearson (eds), *The Handbook of Reading Research*, vol 2. London: Longman.
- Day, H.D. and Day, K. (1979). 'The reliability and validity of the Concepts About Print and Record of Oral Language'. *Resources in Education, ED 179 932*. Arlington, Virginia: ERIC Document Reproduction Service.
- Diamond, I. And Jefferies, J. (2001). *Beginning Statistics. An Introduction for Social Scientists*. London: SAGE Publications.
- Duncan, L., Seymour, P. and Hill, S. (1997). 'How important are rhyme and analogy in beginning reading?', *Cognition*, 63, 171-208.
- Echols, L.D., West, R.F., Stanovich, K.E. and Zehr, K.S. (1996). 'Using children's literacy activities to predict growth in verbal cognitive skills: A longitudinal investigation'. *Journal of Educational Psychology*, 88, 296-304.
- Ehri, L. (1980). 'The development of orthographic images'. In U. Frith (ed), *Cognitive processes in spelling*. London: Academic Press.
- Ehri, L. (1983). 'A critique of five studies related to letter-name knowledge and learning to read'. In L.M. Gentile, M.L. Kamil & J.S. Blanchard (eds), *Reading research revisited*. Columbus, OH: Charles E. Merrill.
- Ehri, L. (1984). 'The development of spelling knowledge and its role in reading acquisition and reading disability'. *Journal of Learning Disabilities*, 22, 356-365.
- Ehri, L. and Wilce, L.S. (1985). 'Movement into reading: Is the first stage of printed word learning visual or phonetic?' *Reading Research Quarterly*, 20, 163-179.
- Ehri, L. (1986). The influence of spellings on speech: Are alveolar flaps /d/ or /t/? In D. Yaden and S. Templeton (eds) *Metalinguistic awareness and beginning literacy*. Portsmouth, NH: Heinemann.
- Ehri, L. and Wilce, L. S. (1987). 'Does learning to spell help beginners learn to read words?' *Research Reading Quarterly*, 22, 47-65.
- Ehri, L. (1991). 'Learning to read and spell words'. In L. Rieben and C. A. Perfetti (eds), *Learning to read: basic research and its implications*. London: Lawrence Erlbaum Associates Publishers.
- Ehri, L. (1994). 'Development of the ability to read words'. In R. Ruddell, J. Ruddell and H. Singer (ed), *Theoretical models and processes of reading*. Newark, DE: International Reading Association.
- Ehri, L. (1995). 'Phases of development in learning to read words by sight'. *Journal of Research in Reading*. 18 (2), 116-125.

- Ehri, L. (1997). 'Learning to read and learning to spell are one and the same, almost.' In C. A. Perfetti, Rieben, L, and Fayol, M. (ed.), *Learning to spell: research, theory and practice across languages*. London: Lawrence Erlbaum Associates Publishers.
- Ehri, L. (1998). 'Grapheme-phoneme knowledge is essential for learning to read words in English'. In J. L. Metsala and L. C. Ehri (eds), *Word recognition in beginning literacy*. London: Lawrence Erlbaum Associates Publishers.
- Ehri, L., Nunes, S., Willows, D., Schuster, B. Yaghoub-Zabeh, Z. and Shanahan, T. (2001). 'Phonemic awareness instruction helps children learn to read: Evidence from the National Panel's meta-analysis'. *Reading Research Quarterly*, 36, 250-287.
- Elley, W. B. (1992). *How in the world do students read? IEA study of reading literacy: The Hague: the International Association for the evaluation of Educational Achievement*.
- Ellis, N. (1997). 'Interactions in the development of reading and spelling: stages, strategies and exchange of knowledge'. In C. A. Perfetti, Rieben, L, & Fayol, M. (ed.), *Learning to spell: research, theory and practice across languages*. London: Lawrence Erlbaum Associates Publishers.
- Ferreiro, E. and Teberosky, A. (1983). *Literacy before schooling*. London: Paul Chapman.
- Fox, B. and Routh, D.K. (1975). 'Analysing spoken language into words, syllables and phonemes: A developmental study'. *Journal of Psycholinguistic Research*, 4, 331-342.
- Fries, C.C. (1963). *Linguistics and Reading*. New York: Holt, Rinehart and Winston.
- Frith, U. (1979). 'Reading by eye and writing by ear'. In P. A. Kolars, Wrolstad, M.E., Bourma, H. (ed.), *Processing of visible language vol.1*. New York; London: Published in cooperation with NATO Scientific Division [by] Plenum.
- Frith, U. (1980). 'Unexpected Spelling Problems'. In U. Frith (ed), *Cognitive Processes in Spelling*. Academic Press.
- Frith, U. (1985). 'Beneath the surface of developmental dyslexia'. In K. E. Patterson, Marshall, J.C. & Coltheart, M. (ed.), *Surface Dyslexia*. Hillsdale: N.J: Erlbaum.
- Garner, R.(1991). 'Children's use of strategies in reading'. In D.F. Bjorklund (ed.), *Children's strategies: Contemporary views of cognitive development*. Hillsdale, NJ:Erlbaum.
- Gaskins, I. W. (1998). 'A beginning literacy program for at-risk and delayed readers'. In J. L. Metsala and L. C. Ehri (eds), *Word recognition in beginning literacy*. London: Lawrence Erlbaum Associates Publishers.
- Goodman, K.S. (1976). 'Reading : A psycholinguistic guessing game'. In H. Singer and R.B. Ruddell (eds), *Theoretical models and processes of reading*. Newark, DE: International Reading Association.
- Goodman, K.S. and Goodman, Y.M. (1979). 'Learning to read in natural'. In H. Singer and R.B. Ruddell (eds), *Theoretical models and processes of reading*. Newark, DE: International Reading Association.
- Goodman, Y.M. (1981). 'Test review: Concepts About Print Test'. *The Reading Teacher*, 34, 445-448.
- Goodman, Y. M. and Burke, C. L. (1982). 'Language in teacher education'. In K. Goodman (ed.), *Language and Literacy: the selected writings of Kenneth Goodman, Vol. II. Reading, Language and the classroom teacher*. London: Routledge and Kegan Paul.
- Goswami, U. C. and Bryant, P. E. (1990). *Phonological skills and learning to read*. London and Hove: Lawrence Erlbaum Associates.

- Goswami, U.C. (1993). 'Toward an interactive analogy model of reading development: decoding vowel graphemes in beginning reading'. *Journal of Experimental Child Psychology*, 56, 443-475.
- Goswami, U. C., Porpodas, C. & Wheelwright, S. (1997). 'Children's orthographic representations in English and Greek'. *European Journal of Psychology of Education*, 12, 273-292.
- Goswami, U. C. (1998). 'The role of analogies in the development of word recognition'. In J. L. Metsala and L. C. Ehri (eds), *Word recognition in beginning literacy*. London: Lawrence Erlbaum Associates Publishers.
- Goswami, U. C., Gombert, J. & DeBarrera, F. (1998). 'Children's orthographic representations and linguistic transparency: nonsense word reading in English, French and Spanish'. *Applied Psycholinguistics*, 19, 19-52.
- Goswami, U.C. (1999). 'Causal connections in beginning reading: the importance of rhyme'. *Journal of Research in Reading*, 22 (3), 217-240.
- Goswami, U.C. and East, M. (2000). 'Rhyme and analogy in beginning reading: conceptual and methodological issues'. *Applied Psycholinguistics*, 21, 63-93.
- Goswami, U. C. (2001). 'Rhymes are important: a comment on Savage'. *Journal of Research in Reading*, 24 (1), 19-29.
- Gough, P.B. and Hillinger, M.L. (1980). 'Learning to read: An unnatural act'. *Bulletin of the Orton Society*, 30, 179-196.
- Gough, P.B. and Tunmer, W.E. (1986). 'Decoding, reading and reading disability'. *Remedial and Special Education*, 7, 6-10.
- Gough, P.B. and Juel, C. (1991). 'The first stages of word recognition'. In L.Rieben and C.A. Perfetti (eds), *Learning to Read: Basic Research and its Implications*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Gough, P.B., Juel, C. and Griffith, P.L. (1992). 'Reading, spelling and the orthographic cipher'. In P.B. Gough, L. Ehri and R. Treiman (eds). *Reading Acquisition*, Hillsdale, NJ: Lawrence Erlbaum Associates.
- Greene, J. and D'Oliveira, M. (2001). *Learning to use statistical tests in psychology*. Buckingham. Open University Press.
- Guimaraes, A. S. and Youngman, M. (1995). 'Portuguese pre-school teachers' beliefs about early literacy development'. *Journal of Research in Reading*, 18, 39-52.
- Hannon, P. (1995). *Literacy, home, and school: research and practice in teaching literacy with parents*. London: Falmer Press.
- Hannon, P. and Nutbrown, C. (1997). 'Teachers' use of a conceptual framework for early literacy education involving parents'. *Teacher Development*, 1, 405-420.
- Harris, M. and Giannouli, V. (1999). 'Learning to read and spell in Greek: the importance of letter knowledge and morphological awareness'. In M. Harris and G. Hatano (eds), *Learning to read and write: a cross-linguistic perspective*. Cambridge: Cambridge University Press.
- Harste, J., C., Burke, C.L. and Woodward, V.A. (1982). 'Children's language and world: Initial encounters with print'. In J. Langer and M. Smith-Burke (eds), *Bridging the gap: Reader meets author*. Newark, DE: International Reading Association.
- Hoover, W. A. and Tunmer, W.E. (1993). 'The Components of Reading'. In G.B. Thompson, W.E. Tunmer and T. Nicholson (eds), *Reading Acquisition Processes*. Multilingual Matters Ltd.

- Johns, J.L. (1980). 'First graders' Concepts About Print'. *Reading Research Quarterly*, 15 (4), 529-549.
- Just, M.A. and Carpenter, P.A. (1987). *The Psychology of Reading and Language Comprehension*. Boston, Mass.: Allyn and Bacon.
- Kerlinger, F. N. (1986). *Foundations of Behavioral Research*. N.Y; London: Holt, Rinehart and Winston Inc.
- Kinnear, P.R. and Gray, C.D. (2000). *SPSS for Windows Made Simple*. Psychology Press Ltd.
- Kress, G. (1997). *Before writing: rethinking the paths to literacy*. London: Routledge.
- Langer, P., Kalk, J.M. and Searls, D.T. (1984). 'Age of admission and trends in achievement: A comparison of Blacks and Caucasians'. *American Educational Research Journal*, 21, 61-78.
- Lennox, C. and Siegel, L. S. (1994). 'The role of phonological and orthographic processes in learning to spell'. In G. D. A. Brown and N. C. Ellis (eds), *Handbook of spelling*. Chichester: John Wiley and Sons.
- Liberman, I.Y. (1971). 'Basic research in speech and laterilization of language: Some implications for reading disability'. *Bulletin of the Orton Society*, 21, 7-87.
- Liberman, J. Y., Shankweiler, D., Fischer, F.W. and Carter, B. (1974). 'Explicit syllable and phoneme segmentation in the young child.' *Journal of Experimental Child Psychology*, 18, 201-212.
- Liberman, I.Y., Shankweiler, D., Liberman, A.M., Fowler, C. and Fischer, F.W. (1977). Phonetic segmentation and recoding in the beginning reader. In A.S. Reber and D.L. Scarborough (ed), *Toward a psychology of reading: The proceedings of the CUNY Conference*. Hillsdale, N.J: Erlbaum.
- Lundberg, I., Olofsson, A. and Wall, S. (1980). Reading and spelling skills in the first school years predicted from phoneme awareness skills in kindergarten.
- Lundberg, I., Frost, J. & Petersen, O-P. (1988). 'Effects of an extensive program for stimulating phonological awareness in pre-school children'. *Reading Research Quarterly*, 23, 264-284.
- Manolitsis, G. (2000). 'Μέτρηση και αξιολόγηση μεταγλωσσικών ικανοτήτων παιδιών ηλικίας 5-6 ετών'. Εκδ. Γρηγόρη, Αθήνα. ('Measuring and evaluating children's metaphonological skills at the age of 5-6 years old'. Grigori, Athina)
- MacBride-Chang, C. (1995). 'What is Phonological Awareness?'. *Journal of Educational Psychology*, 87 (2), 179-192.
- Maccoby, E.E. and Jacklin, A.N. (1974). *The psychology of sex differences* Stanford, CA. Stanford University Press.
- MacMillan, B.M. (2002). 'Rhyme and reading: a critical review of the research methodology'. *Journal of Research in Reading*, 25 (1), 4-42.
- Mann, V.A. and Liberman, I.Y. (1984). 'Phonological Awareness and Verbal Short-Term Memory'. *Journal of Learning Disabilities*, 17 (10), 592-600.
- Marsh, G., Friedman, M., Welch, V. & Desberg, P. (1981). 'A cognitive-developmental theory of reading acquisition'. In G. E. W. MacKinnon, T.G. (ed.), *Reading Research: Advances in theory and practice Vol. 3*. New York: Academic Press.
- Mason, J. (1980). 'When do children begin to read: An exploration of four-year old children's letter and word reading competencies'. *Reading Research Quarterly*, 15, 203-227.
- Maykut, P. and Morehouse, R. (1994). *Beginning qualitative research: a philosophic and practical guide*. London: Falmer.

- McClure, K.K., Ferreira, F. and Bisanz, G.L. (1996). 'Effects of grade, syllable segmentation and speed of presentation on children's word blending ability'. *Journal of Educational Psychology*, 88, 670-681.
- McLane, J. B. and McNamee, G. D. (1990). *Early literacy*. Cambridge, Mass.; London: Harvard University Press.
- McQuillan, J. (1998). *The literacy crisis: false claims, real solutions*. Portsmouth: NH: Heinemann.
- Meek, M. (1993). 'Reading in the balance'. *Child Education*, ..., 31-55.
- Mertens, D. M. (1998). *Research methods in education and psychology: integrated diversity with quantitative and qualitative approaches*. Thousand Oaks, California: Sage.
- Mommers, M.J.C. (1987). 'An investigation into the relation between word recognition skills, reading comprehension and spelling skills in the first two years of primary school'. *Journal of Research in Reading*, 10, 122-143.
- Morais, J., Bertelson, P., Cary, L. & Alegria, J. (1986). 'Literacy training and speech segmentation'. *Cognition*, 24, 45-64.
- Morais, J. (1991). Phonological awareness: A bridge between language and literacy. In D. Sawyer and B. Fox (ed), *Phonological awareness in reading: The evolution of current perspectives*. New York. Springer-Verlag.
- Morris, D. and Perney, J. (1984). 'Developmental spelling as a predictor of first-grade reading achievement'. *The Elementary School Journal*, 84 (4), 441-457.
- Morrison, F.J. (1991). 'Making the cut: Early schooling and cognitive growth'. *Paper presented at the biennial meeting of the Society for Research in Child Development*, Seattle, WA.
- Mortimore, P., Sammons, P., Stoll, L., Lewis, D.R. and Ecob, R. (1988). *School Matters*. London: Paul Chapman.
- Moser, C. A. and Kalton, G. (1977). *Survey methods in social investigation*. London: Heinemann.
- National Reading Panel Report: Teaching children to read (2000). www.nichd.nih.gov.
- Neuman, S.B. and Roskos, K.A. (1990). *The influence of literacy-enriched play settings on preschoolers' engagement with written language*. Chicago: National Reading Conference.
- Neuman, S.B. and Roskos, K.A. (1992). 'Literacy Objects as Cultural Tools: Effects on children's literacy behaviors in play'. *Reading Research Quarterly*, 27 (3), p. 202-225.
- Neuman, S. B. and Roskos, K. A. (1993). *Language and literacy learning in the early years: an integrated approach*. Fort Worth; London: Harcourt Brace Jovanovich College.
- Neuman, S. B. and Roskos, K. A. (1997). 'Knowledge in practice: Contexts of participation for young writers and readers'. *Reading Research Quarterly*, 32, p. 10-32.
- Neuman, S. B. and Roskos, K. A. (2005). 'The state of state pre-kindergarten standards'. *Early Childhood Research Quarterly*, 20, p. 125-145.
- Neuman, S. B. and Roskos, K. A. (2005). 'Whatever happened to developmentally appropriate practice in early literacy? *Beyond the Journal- Young children on the web*, July, www.journal.naeyc.org.
- Nutbrown, C., Hannon, P. & Weinberger, J. (1991). 'Training teachers to work with parents to promote early literacy development'. *International Journal of Early Childhood*, 23, 1-10.
- Oloffson, A. and Lundberg, I. (1983). 'Can phonemic awareness be trained in kindergarten?' *Scandinavian Journal of Psychology*, 26, 35-44.

- Oloffson, A. and Lundberg, I. (1985). 'Evaluation of a long-term effects of phonemic awareness training in kindergarten: Illustrations of some methodological problems in evaluation research.' *Scandinavian Journal of Psychology*, 26, 21-34.
- Oppenheim, A. N. (1992). *Questionnaire design, interviewing and attitude measurement*. London: Pinter.
- Pallant, J. (2001). *SPSS: Survival manual*. Buckingham. Open University Press
- Panteliadou, S. και Cheppaki, T. (1995). 'Τεχνική γλώσσα γραφής και ανάγνωσης στα δυο πρώτα σχολικά χρόνια'. *Γλώσσα*, 37, 21-39. ('Technical language of writing and reading at the first two years of school')
- Perfetti, C.A. (1977). 'Language comprehension and fast decoding: Some psycholinguistic prerequisites fro skilled reading comprehension'. In J.T. Guthrie (ed), *Cognition, Curriculum and Comprehension*. Newark, DE: International Reading Association.
- Perfetti, C. A. (1991). 'Representations and awareness in the acquisition of reading competence'. In L. Rieben and C. A. Perfetti (eds), *Learning to read: basic research and its implications*. London: Lawrence Erlbaum Associates Publishers.
- Papoulia-Tzelepi, P. (1994). 'Η ανάδυση του γραμματισμού και το νηπιαγωγείο (εμπειρική έρευνα)'. *Γλώσσα*, 31, 4-16. (Emergent literacy and kindergarten (an empirical study))
- Porpodas, K. (1989). 'Η ορθογραφία στην Α' Δημοτικού σε σχέση με τη γλωσσική και μνημονική ικανότητα'. *Ψυχολογικά Θέματα*, 2,4, 201-214. ('Spelling in first grade in relation to linguistic and mnemonic ability'. *Psychologica Themata*, 2,4, 201-214)
- Porpodas, K. (1990). 'Ανάγνωση και γραφή στα πεντέμισι ή εξίμισι χρόνια; (ο ρόλος της χρονολογικής ηλικίας στην εκμάθηση του γραπτού λόγου'. *Παιδαγωγική Επιθεώρηση*, 12 (1), 65-82. ('Reading and spelling in 5.6 yrs or 6.6 yrs? (the role of chronological age in literacy learning''). *Pedagogiki Epitheorisi*, 12 (1), 65-82)
- Porpodas, K. (1992). 'Η εκμάθηση της ανάγνωσης και ορθογραφίας σε σχέση με την ηλικία και τη φωνημική ενημερότητα'. *Ψυχολογία*, 1, 30-43. (Porpodas, K. 'Learning reading and spelling in relation to age and phonological awareness'. *Psychologia*, 1, 30-43)
- Porpodas, K. (2002). *Η Ανάγνωση*. Πάτρα (Porpodas, K. 'Reading'. Patra)
- Porpodas, C. (1991). 'The relation between phonemic awareness and reading and spelling of Greek words in the first school years'. In M. Carretero, M.L. Pope, P.R. Simons and J.I.Pozo (eds), *Learning and Instruction: European Research in an International context*, vol. 3. Oxford: Pergamon Press.
- Porpodas, C. (2001). 'Cognitive processes in first grade reading and spelling of Greek'. *Ψυχολογία*, 40-46.
- Read, C., Yun-Fei, Z., Hong-Yin, N. & Bao-Qing, D. (1986), 'The ability to manipulate speech sounds depends on knowing alphabetic writing'. *Cognition*, 24, 31-44.
- Riley, J. (1995). 'The relationship between adjustment to school and success in reading by the end of the reception year'. *Early Child Development and Care*, 114, 25-38.
- Riley, J. (1996a). *Teaching of reading: the development of literacy in the early years of school*. London: Chapman.
- Riley, J.L. (1996b). 'The ability to label the letters of the alphabet at school entry: a discussion on its value'. *Journal of Research in Reading*, 19 (2), 87-101.
- Riley, J. (1999). *Teaching Reading at Key Stage 1 and Before*. Stanley Thornes Ltd.
- Riley, J.L. and Reedy, D. (2003). 'Communication, Language and Literacy'. In J.L. Riley (ed.) *Learning in the early years. A guide for teachers of children 3-7*. Paul Chapman Publishing.

- Robson, C. (1993). *Real world research: a resource for social scientists and practitioner-researchers*. Oxford: Blackwell.
- Robson, C. (2002). *Real world research: a resource for social scientists and practitioner-researchers*. Oxford: Blackwell.
- Roskos, K.A. and Christie, J.F. (2000). *Play and Literacy in Early Childhood: Research from Multiple Perspectives*. New Jersey, Lawrence Erlbaum.
- Saracho, O. (1990). 'Teaching young children: the teacher's function in the early childhood curriculum'. *Early Child Development and Care*, 61, 57-63.
- Savage, R., Stuart, M., and Hill, V. (2001). 'The role of scaffolding errors in reading development: Evidence from the longitudinal and correlational study'. *British Journal of Educational Psychology*, 71, 1-13.
- Seymour, P. H. K. and Porpodas, C. (1980). 'Lexical and non-lexical processing of spelling in dyslexia'. In U. Frith (ed), *Cognitive Processes in Spelling*. London: Academic Press.
- Seymour, P. H. K. and McGregor, C. J. (1984). 'Developmental dyslexia: a cognitive experimental analysis of phonological, morphemic and visual impairments.' *Cognitive Neuropsychology*, 1, 43-83.
- Seymour, P. H. K. and Evans, H. M (1994). 'Levels of phonological awareness and learning to read' *Reading and Writing*, 6, 221-250.
- Seymour, P. H. K. (1997). 'Foundations of orthographic development'. In C. A. Perfetti, Rieben, L, & Fayol, M. (ed.), *Learning to spell: research, theory and practice across languages*. London: Lawrence Erlbaum Associates Publishers.
- Sharp, C. (1998, 6 October). *Age at starting school and the early years curriculum: a select annotated bibliography*. Paper presented at the NFER Annual Conference, London. www.nfer.ac.uk
- Smith, F. (1979). *Understanding reading*. New York: Holt, Rinehart and Winston.
- Smith, J. A., Harre, R. & VanLangehove, L. (1996). *Rethinking methods in psychology*. London: Sage Publications.
- Sonnenschein, S., Brody, G. and Munsterman, K. (1996). 'The influence of family beliefs and practices on children's early reading development'. In L. Baker, P. Afflerbach & D. Reinking (eds), *Developing engaged readers in school and home communities*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Spodek, B. and Saracho, O. N. (1993). *Language and literacy in early childhood education*. New York; London: Teachers College, Columbia University.
- Stage, S.A. and Wagner, R.K. (1992). 'Development of Young Children's Phonological and Orthographic Knowledge as Revealed by their Spellings'. *Developmental Psychology*, 28 (2), 287-296.
- Stahl, S. A and Murray, B. A (1994). 'Defining phonological awareness and its relationship to early reading'. *Journal of Educational Psychology*, 86, 221-234.
- Stainthorp, R. (1989). *Practical psychology for primary teachers: putting theory into practice in the classroom*. London: Falmer.
- Stainthorp, R. and Hughes, D. (1999). *Learning from children who read at an early age*. London: Routledge.
- Stainthorp, R. and Hughes, D. (2000). 'Family literacy activities in the homes of successful young readers'. *Journal of Research in Reading*, 23, 41-54.

- Stanovich, K. E. (1980). 'Toward an interactive-compensatory model of individual differences in the development of reading fluency'. *Reading and Writing: an Interdisciplinary Journal*, 16, 32-71.
- Stanovich, K.E., Cunningham, A.E. & Freeman, D.J. (1984). 'Intelligence, cognitive skills and early reading progress'. *Reading Research Quarterly*, 19, 278-303.
- Stanovich, K.E. (1986). 'Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy'. *Reading Research Quarterly*, 21, 360-407.
- Stanovich, K.E. and West, R.F. (1989). 'Exposure to print and orthographic processing'. *Reading Research Quarterly*, 24, 400-433.
- Stanovich, K.E. (2000). *Progress in understanding reading*. New York: The Guilford Press.
- Strauss, A. L. and Corbin, J. (1990). *Basics of qualitative research: grounded theory procedures and techniques*. Newbury Park, California: Sage.
- Stuart, M. and Coltheart, M. (1988). 'Does reading develop in a sequence of stages?' *Cognition*, 30, 139-181.
- Stuart, M. (1999). 'Getting ready for reading: early phoneme awareness and phonics teaching improves reading and spelling in inner-city second language learners'. *British Journal of Educational Psychology*, 69, 587-605.
- Sulzby, E. (1992). 'Research directions: Transitions from emergent to conventional writing'. *Language Arts*, 69, 291-297.
- Tafa, E., Kaliva, E. και Fragia, M. (1998). 'Πρόγραμμα ενίσχυσης της φωνολογικής ενημερότητας στα παιδιά του νηπιαγωγείου'. *Ανοιχτό Σχολείο*, 66, 32-37. ('Programme of developing kindergarteners' phonological awareness'. *Anichto Scholio*, 66, 32-37)
- Tafa, E. (2001). *Ανάγνωση και γραφή στην προσχολική εκπαίδευση*. Αθήνα: Ελληνικά Γράμματα. (Reading and writing in pre-school education'. Athens: Ellinika Grammata)
- Tafa, E. (2001). 'Η ανάπτυξη της ανάγνωσης και της γραφής στα παιδιά της προσχολικής ηλικίας: ο ρόλος των παιδαγωγών'. *Σύγχρονο Νηπιαγωγείο*, 21, 12-20. ('Children's emergent literacy: the teachers' role'. *Sinchrono Nipiagogio*, 21, 12-20)
- Tafa, E. (2003). *Τι γνωρίζουν τα παιδιά προσχολικής ηλικίας για τα γράμματα του αλφαβήτου και πώς τα χρησιμοποιούν για να γράψουν το όνομα τους*. Στο Π.Τ.Π.Ε Πανεπιστημίου Κρήτης, *Γλώσσα και Μαθηματικά στην Προσχολική Ηλικία*. Ρέθυμνο: Π.Τ.Π.Ε. (What kindergarteners know about the alphabet letters and how they use them to write their names'. In P.T.P.E University of Crete, *Language and Mathematics in Pre-school Education*. Rethymno: P.T.P.E.)
- Taylor, D. and Dorsey-Gaines, C. (1988). *Growing up literate: learning from inner-city families*. Portsmouth: N.H:Heinemann.
- Teale, W. H. and Sulzby, E. (1986). *Emergent Literacy: writing and reading*. Norwood: N.J: Ablex.
- Thorstad, G. (1991). 'The effects of orthography on the acquisition of literacy skills'. *British Journal of Psychology*, 82, 527-537.
- Tizard, B., Blatchford, P., Burke, J., Farquhar, C. & Plewis, I. (1988). *Young children at school in the inner city*. Hove and London: Lawrence Erlbaum.
- Tizard, B. (1993). 'Early influences on literacy'. In R. Beard (ed.), *Teaching literacy in balancing perspectives*. London: Hodder and Stoughton.
- Torgessen, J. K. and Burgess, S. R. (1998). 'Consistency of reading-related phonological processes throughout early childhood: evidence from longitudinal correlational and

- instructional studies'. In J. L. Metsala and L.C. Ehri (ed.), *Word recognition in beginning literacy*. London: Lawrence Erlbaum Associates Publishers.
- Treiman, R. and Baron, J. (1981). 'Segmental analysis ability: Development and relation to reading ability'. In G.E. MacKinnon and T.G. Waller (ed). *Reading Research: Advances in Theory and Practice*. San Diego, CA: Academic Press.
- Treiman, R. (1993). *Beginning to spell*. New York; Oxford: Oxford University Press.
- Treiman, R., Berch, D., Tincoff, R. and Weatherston, S. (1993). 'Phonology and Spelling: The case of syllabic consonants'. *Journal of Experimental Child Psychology*, 56, 267-290.
- Treiman, R. (1994). 'Sources of information used by beginning spellers'. In G. D. A. Brown and N. C. Ellis (eds), *Handbook of spelling*. Chichester: John Wiley and Sons.
- Treiman, R., Cassar, M. and Zukowski, A. (1994). 'What types of linguistic information do children use in spelling? The case of flaps'. *Child Psychology*, 56, 267-290.
- Treiman, R. and Cassar, M. (1997). 'Spelling Acquisition in English'. In C. A. Perfetti, Rieben, L, & Fayol, M. (ed.), *Learning to spell: research, theory and practice across languages*. London: Lawrence Erlbaum Associates Publishers.
- Treiman, R. (1998). 'Why spelling? The benefits of incorporating spelling into beginning reading instructions'. In J. L. Metsala and L. C. Ehri (eds), *Word recognition in beginning literacy*. London: Lawrence Erlbaum Associates Publishers.
- Tunmer, W.E., Herriman, M.L. & Nesdale, A.R. (1988). 'Metalinguistic abilities and beginning reading'. *Reading Research Quarterly*, 23, 134-158.
- Tunmer, W. E. (1991). 'Phonological awareness and literacy acquisition'. In L. Rieben and C. A. Perfetti (eds), *Learning to read*. London.
- Tymms, P., Merrell, C. & Henderson, B. (1997). 'The first year at school: A quantitative investigation of the attainment and progress of pupils'. *Educational Research and Evaluation*, 3, 101-108.
- Uhry, J.K. and Shepherd, M.J. (1993). 'Segmentation/spelling instruction as part of a first-grade reading program: Effects on several measures of reading'. *Research Reading Quarterly*, 28 (3), 219-232.
- Βαρνάβα-Σκούρα, Τ.(1994). 'Οι ιδέες των παιδιών για τη γραφή και η μαθησιακή διαδικασία'. *Εκπαιδευτική Κοινότητα*, 27, 18-20. ('Children's ideas about writing and the learning process', *Ekpedefitiki Kinotita*, 27, 18-20)
- Varnhagen, C. K., McCallum, M. and Burstow, M. (1997). 'Is children's spelling naturally stage-like?' *Reading and Writing: an Interdisciplinary Journal*, 9, 451-481.
- Varnhagen, C. K., McCallum, M., Burstow, M., Pawlik, L. and Poon, B. (1997). 'Is children's spelling naturally stage-like?'. *Reading and Writing: An Interdisciplinary Journal*, 9, 451-481.
- Venezky, R.L. and Calfee, R. C. (1970). 'The reading competency model'. In H.Singer and R.B. Ruddell (eds), *Theoretical Models and Processes of Reading*. Newark, DE: International Reading Association.
- Wagner, R.K., Torgesen, J.K., & Rashotte, C. A. (1994). 'The development of reading-related phonological processing abilities: New evidence of bi-directional causality from the latent variable longitudinal study'. *Developmental Psychology*, 30, 73-87.
- Walker, R. (1993). *Doing research, a handbook for teachers*. London: Routledge.
- Walsh, D.J., Price, G.G., & Gillingham, M.G. (1988). 'The critical but transitory importance of letter naming'. *Reading Research Quarterly*, 23, 108-122.

- Weinberger, J. (1996). *Literacy goes to school: the parents' role in young children's literacy learning*. London: Paul Chapman.
- Weinberger, J. (1996). 'A longitudinal study of children's early literacy experiences at home and later development at home and school'. *Journal of Research in Reading*, 19, 14-24.
- Weinstein, L. (1968-1969). 'School entrance age and adjustment'. *Journal of School Psychology*, 7, 20-28.
- Wells, C.G. (1985). 'Pre-school literacy related activities and success in school'. In G. Oron, N. Torrance and A. Hildyard (eds), *Literacy, Language and Learning: The Nature and Consequences of Reading and Writing*. Cambridge: Cambridge University Press.
- Whitehead, M. (2002). *Developing language and literacy with young children*. London: Paul Chapman.
- Wood, C. and Terrel, C. (1998). 'Pre-school phonological awareness and subsequent literacy development.' *Educational Psychology*, 18, 253-274.
- Wood, E. (2005). 'Young children's voices and perspectives in research: methodological and ethical considerations'. *International Journal of Equity and Innovation in Early Childhood*, 3, 64-76.
- Υπουργική Απόφαση Γ1/58 (ΦΕΚ. 93/ τ. Β' / 10-2-1999). Πρόγραμμα Σπουδών της Νεοελληνικής Γλώσσας στην προ-Δημοτική Εκπαίδευση- Νηπιαγωγείο και στο Δημοτικό Σχολείο. (National Curriculum of Literacy in Pre-Primary and Primary Education)
- Υπουργική Απόφαση Γ2/21072β (ΦΕΚ 304/13-3-2003). Διαθεματικό Ενιαίο Πλαίσιο Σπουδών για το Νηπιαγωγείο. (A Cross Thematic Curriculum Framework for Compulsory Education)

APPENDICES

Appendix 1: Description of the literacy tasks in the pilot study

Phonological awareness

1. End phoneme sound production

Procedure: Four noun words were orally presented to the child who was asked to find a word, which ended in the same sound.

Example: Say a word that ends with the same phoneme as the word ‘παγωτό’ (/p/a/j/o/t/o/) (ice-cream) or a word that ends with the same phoneme as the word ‘γάλα’ (/j/a/l/a/)(milk).

Aim: The aim of this task was to check children’s phonological awareness, specifically, whether they were able to isolate the last phoneme of a word and find a new one that ended in the same sound.

2. Addition of the initial phoneme

Procedure: Five incomplete words were orally presented to each child who was asked to add the appropriate phoneme in order to make a real word. The researcher did not prompt the child to make any corrections.

Example: You will hear a word of which the first phoneme has been omitted, because Mrs Wordeater ate it e.g. –ραπέζι (/r/a/p/e/z/i/) - (τ)ραπέζι (t/r/a/p/e/z/i/) (table).

Aim: This task aimed to check whether the child was able to understand the incomplete word that was said, find which phoneme was missing and add the appropriate one in order to make a complete word that is meaningful.

3. Syllable counting

Procedure: The child was given four written words one by one and was asked to count the syllables of each word by clapping his/her hands. If the child could not read the word or even visually recognize it, he was given it. If the child had difficulty in hearing the word, sounding it out clearly and counting the syllables simultaneously the researcher

helped him/her by repeating after her the word slowly and clearly and counting with her fingers as the child was orally counting. If the child still could not do the task properly the researcher proceeded to the next task.

Example: Κα-va-πί-vi (k/a/n/ar/i/n/i) (canary)- four hand –clapping since, it has four syllables.

Aim: The focus of this task was on child's ability to realise that a word consists of one or more syllables, which in turn are comprised of phonemes

4. Phoneme blending

Procedure: Three words were orally presented to the child who was asked to remember the three sequences of phonemes that comprised the three words respectively, one by one. The words were repeated more than once. When the child could not recognize the word, he was given the next testing word and was asked the previous testing word again later. If s/he still could not say the word the researcher proceeded to the next task.

Example: The researcher sounded out the word 'ρόδα' (wheel) ρ/ό/δ/α – r/o/th/a.

Aim: The aim of this task was to check whether the child could recognise the phonemes without looking at the graphemes and blend these phonemes into a word.

Linguistic knowledge - Knowledge about language

5. Use of the definite articles

Procedure: The three definite articles of the Greek grammar e.g. masculine (ο) (/o/), feminine (η) (/e/) and neuter (το) (/t/o/) were presented to the child written on cards. The three articles were only in singular number, because it would have been easier for the children to deal with the nouns in singular number. First, the researcher asked him/her whether s/he could name them. Then, four written words were given to him/her one by one and the child was asked if s/he could read them. If s/he could not read them or even recognize them visually, s/he was told what the words were. After that the child was asked to pick up the article that s/he thought would be the correct one and put it in the right place, which is before the noun.

Example: Which article should accompany the word ‘ λαγός’ (/l/a/j/o/s)(rabbit). The answer is the article ‘ο’- ο λαγός (masculine).

Aim: The aim of the fourth task was to check children’s knowledge of the articles and their use. Specifically, it investigates children’s ability to discriminate the meaning of the three genders. This task concerns children’s knowledge of the use of the Greek language.

6. Singular and plural number of the nouns

Procedure: Two sets of four nouns were orally presented to the child. The first set was presented to the child in plural number and s/he was asked to say the singular number of all four of them and then the second set was presented to him/her in the singular number and s/he was asked to say the plural number of all four of them. Again the child was able to self-correct.

Example: a) Οι καραμέλες (/i/ /k/a/r/a/m/e/l/e/s/) (the bonbons-plural number) – η καραμέλα (/e/ /k/a/r/a/m/e/l/a) (the bonbon-singular number), b) η ρόδα (/i/ /r/o/t/h/a/) (the wheel-singular number) – οι ρόδες (/i/ /r/o/t/h/e/s/) (the wheels-plural number).

Aim: The task’s aim focused on checking the child’s knowledge of the way to form the singular and plural type of a noun.

7. Diminutives

Procedure: The child was orally presented with four noun words, one by one, and was asked by the researcher to form the diminutive types of these nouns. The child was allowed to self-correct.

Example: βάζο (vazo)(the vase) – βάζακι (vazaki)(the small vase).

Aim: To check whether the children know how to say that something is small by using just one word or even find any alternative forms.

8. Identification of structural errors within a sentence (jumbled up words within a sentence)

Procedure: The researcher asked the child to say a simple sentence consisting of three words and wrote it down on a piece of paper. Then, she read the sentence while pointing at each word. Covering up the sentence, she wrote the sentence again in the wrong order and showed it to the child. She read the sentence to the child and asked

him/her to comment on whether the meaning of the sentence was correct in the way it was written and justify it. The item was scored as correct only if the child realised the difference.

Example: Correct sentence: Έχω ένα κόκκινο παπούτσι – Eho kokino paputsi (I have a red shoe)

Incorrect sentence: Παπούτσι κόκκινο ένα έχω - Paputsi kokino ena eho (Shoe red I a have)

Aim: To investigate whether the child had the ability to realise that the words of the sentence were indeed jumbled up and that this resulted in being unclear the meaning.

Letter knowledge and early reading

9. Letter identification (alphabet response, letter sound response, word, image) with only lower case letters

Procedure: Each alphabet letter was presented on a card in random order. Only lower case letters were used in this task, because children are more familiar with lower case letters. The children were asked to name the letter, say its sound and a word that started with that sound, and describe the letters' patterns. If one of his/her answers was incorrect, one or more chances of self-correction were given to him/her by asking whether s/he was sure about his/her answer

Example: α, alpha, /a/, /αεροπλάνο/ (plane), a circle with an attached stick on the right.

Aim: To check the child's knowledge of grapheme/phoneme correspondence.

10. Letter recognition in word context

Procedure: Twenty-four words written on cards were randomly presented to each child. Then the child was asked to find which word began with each one of the phonemes. Then, the child was asked whether s/he knew the word. The child was given one or more chance to self-correct. The researcher prompted the child to think over his/her answer and try again.

Example: Find a word that starts with / δ / (th) - δάσος (forest) or with / ε / (s) – έλατο (fir-tree).

Aim: To check the child's skill in grapheme/phoneme correspondence

11. Formation of two-phoneme syllables with cards

Procedure: The child was asked to form syllables using all seven vowels of the Greek alphabet along with seven random consonants. All fourteen letters were presented on cards. The child had to form the syllable that s/he was asked to make by the researcher. The child was able to choose any of the vowels that had the same sound in order to form the syllable. S/he could self-correct. Then, both the researcher and the child sounded out together the phonemes of the formed syllable and checked whether it was correct.

Example: Make the syllable $\mu\omicron/\omega$ (mo) or the syllable $\xi\varepsilon$ (kse). In this case the child could put either the /o/ (omicron – ο) or the /o/ (omega – ω).

Aim: To check whether the child could aurally break down the phonemes comprising the syllable, allocate the appropriate grapheme for each one and then come up with a final blend of graphemes.

12. Identification of structural errors within a word

Procedure: The researcher asked the child to say a simple word and wrote it down on a piece of paper. Then she slowly and clearly read the word out to the child, pointing at the same time to each letter. She covered up the correct word and wrote again the word again, this time putting the letters in the wrong order. Then, she presented the word and asked him/her to say whether the structure of the word was correct and why the new word was different from the first one.

Example: Correct word: Παπούτσι (p/a/p/u/t/s/i/)(shoe)

Incorrect word: τσιπαπού

Aim: To check whether the child could visually discriminate the changes made to the graphemes and to the meaning of the word.

13. Reading the words

Procedure: Three words written on three cards were visually presented to the child, one by one, and s/he was asked to read them out. The child was allowed to think about the word, sound it out and then read it. If the child made any mistakes the researcher prompted him/her to think it over and try again.

Example: The word μ/ω/ρ/ό (m/o/r/o)- μωρό (baby).

Aim: The aim of this task was to check the child's skills at grapheme/phoneme correspondence when reading a word.

14. Reading the sentence

Procedure: The child was asked to read the sentence. The sentence consisted of four simple and familiar words. The child was given enough time to think about the sentence and sound the words out. In many cases the researcher repeated the syllables the child was reading and she helped him/her to read the sequence of the syllables, if s/he was confused.

Example: The sentence was: 'Φοράω ένα κόκκινο καπέλο' (Forao ena kokino kapelo) (I am wearing a red hat).

Aim: To assess the child's ability to read not only isolated words but also words within a sentence.

Writing

15. Copying a sentence

Procedure: The child was asked by the researcher to say a sentence, which she wrote down on a piece of paper. Then the child was asked to copy that sentence. The child did not get any help and the child was not prompted to check any mistakes.

Example: An example of a sentence to be copied: 'Η κότα είναι ένα ζώο' (I kota ine ena zoo- Hen is an animal)

Aim: The aim of this task was to check whether the child was able to copy exactly what s/he was looking at, without missing out or changing anything in the initial sentence.

16. Writing names and words

Procedure: The child was asked to write on a piece of paper his/her name or any other names, or any known words. The child did not get any help from the researcher, unless the latter was asked any questions about a word's spelling. The incorrect spelling was not marked as an error.

Example: Κατερίνα (Katerina), κότα (kota-hen), ξ (x), τ (t) etc.

Aim: The aim of this task was to check the child's writing.

Concepts about print

Procedure: The researcher handed the child a fairy tale and asked him/her to point to the front and the back of the book. Then the child was asked to riffle through the pages and show her:

- a. the direction being followed in order to read a text,
- b. the beginning point of the page and the end,
- c. a sentence,
- d. the first and last word of the sentence,
- e. the stressed sounds,
- f. one or two words,
- g. a word,
- h. the initial and final letter of the word,
- i. one or two letters
- j. the full stop

Aim: The aim of this task was to check how familiar the child was with reading a book, riffling through its pages, the directionality in reading, the concept of first and last, of the beginning and the end, the punctuation, the concept of a letter, of a word and of a sentence.

Appendix 2: Child interview schedule for the pilot study

- 1. Do you like books? If no, why?*
- 2. What kind of books do you like?*
- 3. Which is your favourite story and why?*
- 4. Does anybody tell you any stories at home? Who?*
- 5. Does s/he or do they either read them out or do they narrate them?*
- 6. Do you like her/him or them to read you stories to sleep?*
- 7. Which bedtime story do you like?*
- 8. Have you tried to read them on your own or do you usually ask someone else's help?*
- 9. Are there any children's books in the bookcase at home?*
- 10. Have you seen your mum reading? What have you seen her reading?*
- 11. Have you seen your dad reading? What have you seen him reading?*
- 12. Does your teacher read you any stories? If yes, do you enjoy listening to stories?*
- 13. Which stories would you like your teacher read to you?*
- 14. Why do you think people learn how to read?*
- 15. Do you know how to write any letters of the alphabet?*
- 16. Do you know how to write your name?*
- 17. Do you know how to write any words?*
- 18. Who showed you how to write: a) the letters, b) your name and c) the words?*
- 19. Have you ever tried to write a letter or a card to someone that you love?*
- 20. If yes, has anyone helped you to write it?*
- 21. Why do you think people learn how to write?*

Appendix 3: Teacher interview schedule for the pilot study

1. *How long have you been teaching in kindergarten?*
2. *How many years did your professional training last?*
3. *Have you received any in-service training?*
4. *How much time do you spend on literacy activities: a) daily, b) weekly*
5. *Do you have adequate materials within the school for teaching literacy? If yes can you specify what?*
6. *Are children able to borrow books from the kindergarten's library?*
7. *Do you have to prepare your own materials for teaching literacy?*
8. *Apart from the teacher's handbooks that the Pedagogic Institute has supplied, do you use any others in order to find materials for literacy activities?*
9. *Can you tell me any of the literacy tasks that you do to your class?*
10. *What are the children's responses to literacy activities?*
11. *Are there any tasks that children find difficult? Why do you think that this is?*
12. *Do you adapt the content of literacy tasks according to children's abilities?*
13. *According to your experience have you noticed any changes in the way that children develop their knowledge of literacy comparing the old curriculum to the new one?*
14. *Do you think children at the age of four and five years old are able to receive literacy teaching? Why?*
15. *Do you think that learning literacy in kindergarten facilitates children's performance in primary school? Why?*
16. *Have any changes been made in the content of literacy tasks, since the new curriculum has been implemented? If so, what?*
17. *Have you received any guidelines regarding the way that literacy should be taught in kindergarten?*
18. *Are there any tasks that the new curriculum proposes that you think that are not appropriate for kindergarteners?*
19. *In your opinion are there any changes that should be made in the curriculum of the first and second grade of primary school, since the implementation of the new curriculum in kindergarten?*

20. *Do you think that the way the new curriculum is implemented serves its fundamental aims?*
21. *Do you think that home literacy plays a significant role in children's literacy learning?*
22. *Are parents interested in their children's performance in literacy? In what way?*
23. *Is there something that you would like to discuss and it has not been mentioned?*

Appendix 4: Child interview schedule (Time 1)

1. *Do you like books e.g. fairytales, stories? If no, specify.*
2. *What kind of books do you like? (Adventurous, funny, informative, etc.)*
3. *Which one is your favourite story and why?*
4. *Do you have any brothers and sisters? Older or younger? If yes, do they know how to read?*
5. *Does anybody tell you any stories at home? Who?*
6. *Does s/he or do they read them out, does s/he or do they narrate them or both? What kind of stories?*
7. *Do you like him/her or them to read you stories before you go to sleep?*
8. *Which bedtime story do you like? Why?*
9. *Have you tried to read them alone or do you usually ask someone else's help?*
10. *Are there any children's books in the bookcase at home?*
11. *Have you seen your mum reading? What does she read (e.g. newspapers, magazines, books)? Why do you think mummy is reading (e.g. newspapers etc.)?*
12. *Have you seen your dad reading? What does he read (e.g. newspapers, magazines, books)? Why do you think daddy is reading (e.g. newspapers etc.)?*
13. *Do you borrow any books from the school's library? What kind of books do you borrow? If no, why?*
14. *Does your teacher read you stories? If yes, do you enjoy listening to stories at school? Why do you think your teacher reads you stories?*
15. *What stories would you like your teacher to read to you? Specify. Why?*
16. *Why do you think that people learn to read?*
17. *When do you think mummy or daddy learned to read? Where? Who taught them how to read?*
18. *How do you think you will learn to read? Where? Who's going to teach you how to read?*
19. *Have you ever tried to write a letter or a card to someone that you love?*
20. *Has anyone helped you to write it?*
21. *Why do you think that people learn to write?*
22. *When do you think mummy or daddy learned to write? Where? Who taught them how to write?*
23. *How do you think you will learn to write? Where? Who's going to teach you how to write?*

24. *When do you think you will be able to write? Why?*
25. *Do you know how to write any letters of the alphabet? If yes, who showed you how to write them?*
26. *Do you know how to write your name? If yes, who showed you how to write it?*
27. *Do you know how to write any words? If yes, who showed you how to write them?*

Appendix 5: Child interview schedule (Time 2)

1. *Do you learn how to read and write in school?*
2. *Do you like reading? Why?*
3. *Do you like reading a book or a fairytale on your own, without having anyone to help you?*
4. *Do you like taking papers and pencils and write? Why?*
5. *Has your teacher taught you any letters of the alphabet?*
6. *Has she also taught you the sounds of the letters?*
7. *Has she taught you how to read and write any words?*
8. *Why do you think that your teacher teaches you all these?*
9. *If no, would you like her to teach you the alphabet, letters/sounds?*
10. *Would you like to learn how to read and write in kindergarten? Why?*
11. *Why do you think your teacher doesn't teach you reading and writing?*
12. *Do you think that what she teaches you is new for you or you have already learnt it at home e.g. from daddy and mummy?*
13. *Can you describe what literacy games the teacher plays with you in classroom?*
14. *Do you participate in these games? Why?*
15. *Which one do you enjoy most? Why?*
16. *What do you think is more difficult for you reading or writing? Why? What about the other one?*
17. *Do you ask your teacher to help you when you have difficulty in trying to read and write something?*
18. *Does your teacher help you? How?*
19. *Do you practice at home what you have learnt at school about the letters and the sounds?*
20. *If yes, do you ask your parents' help to do it or do you do it on your own?*
21. *What do your parents tell you about the fact that you learn about the letters and sounds or even how to read and write some words?*
22. *Where do you think it is better to learn reading and writing, in kindergarten or in primary school? Why?*
23. *If you knew how to write what would be the first word that you would like to write and why?*
24. *If you knew how to read what would be the first book that you would like to read and why?*

Appendix 6: Teacher interview schedule (Time 1)

1. *How long have you been teaching in the kindergarten?*
2. *How many years did your professional training last?*
3. *Have you received any in-service training?*
4. *How much time do you spend on literacy activities: a) daily b) weekly*
5. *Do you have the adequate materials within school for teaching literacy? If yes can you specify what?*
6. *Are children able to borrow books from kindergarten's library?*
7. *Do you have to prepare your own materials for literacy teaching?*
8. *Apart from the teacher's handbooks, which the Pedagogic Institute has supplied to you, do you use any others in order to find materials for literacy activities?*
9. *Can you give some examples of the tasks you do during the literacy hour?*
10. *From your point of view what are the kindergarteners' responses to literacy activities?*
11. *Do you adapt the content of the literacy tasks according to e.g. children's skills, abilities, age...?*
12. *According to your experience have you noticed any changes in the way that children develop their knowledge of literacy comparing the old curriculum to the new one?*
13. *Do you think that children at the age of four and five years old are ready to receive literacy teaching? Why?*
14. *Do you think that learning literacy in kindergarten facilitates children's performance in primary school? Why?*
15. *Are there any tasks proposed by the new curriculum that you think are not appropriate for kindergarteners?*
16. *Have any changes been made in the content of literacy tasks, since the new curriculum has been implemented? If so, what?*
17. *Have you received any guidelines regarding the way that literacy should be taught in kindergarten?*
18. *Are there any tasks that children find difficult? Why do you think that this is?*
19. *In your opinion are there any changes that should be made in the curriculum of the first and second grade of primary, since the implementation of the new curriculum for kindergarten?*
20. *Do you think that the way the new curriculum is implemented serves the aims it puts forward?*
21. *Do you think that home literacy plays a significant role in children's literacy learning?*

22. *Are parents interested in their children's performance in literacy? In what way?*

23. *Is there anything that you would like to discuss and has not been mentioned?*

Appendix 7: Teacher interview schedule (Time 2)

- 1. At this time of the school year what kind of literacy tasks do you do in your class? Can you give some examples?*
- 2. Are there any literacy tasks that you focus more on? Which are these?*
- 3. Why do you give more emphasis on these?*
- 4. Does the tasks' range of difficulty vary or do you prefer applying tasks of 'medium' degree of difficulty? Why?*
- 5. Are the tasks you apply in your class the same for all children? Why?*
- 6. How do the young kindergarteners cope with literacy tasks?*
- 7. How you noticed any children feeling bored or uninterested in literacy tasks, because they already know how to read and write?*
- 8. How do you deal with the old and the young kindergarteners during these tasks? Why?*
- 9. Does the curriculum propose any literacy tasks that in your opinion are inappropriate for children's age and you skip them? If yes, which are these and why?*
- 10. During your literacy teaching have you noticed any tasks, which children found difficult to complete? Which are these?*
- 11. Why do you think that this is?*
- 12. Based on your experience from dealing with early literacy, do you think that a kindergartener can be taught the way of encoding and decoding the written language?*
- 13. How hard or easy is it for you to deal with early literacy?*
- 14. Were the books, which the Ministry of Education supplied to you, useful for teaching literacy to kindergarteners? Were they as helpful as you expected?*
- 15. Did you have any difficulties (during literacy teaching) that you could not overcome?*
- 16. Can you describe these? How did you handle them?*
- 17. In your opinion how did children perceive literacy tasks? Were these easy, difficult, challenging...?*
- 18. In your opinion have there been any changes in children's performance on literacy tasks since their entry to kindergarten?*
- 19. Are there any differences regarding their literacy skills between the children that you realise that have already much experience in literacy from their home background and those who have less experience?*
- 20. Does parents' participation into children's literacy learning at home facilitate or debilitate children's literacy learning within school? Why?*

21. *Do parents ask to be informed about how they should deal with their child's literacy at home, since s/he is so young, and what they should do?*
22. *How would you describe the collaboration between the teacher and the parents?*

Appendix 8: Literacy tasks coding scheme

Letter Knowledge	
Letter knowledge (letter-name)	A response was taken as correct when it was accurate and was scored 1 point
Letter knowledge (letter-sound)	A response was taken as correct when it was either accurate or when the letter-sound (especially the consonant sounds) was given followed by a vowel making a small CV syllable e.g. B (v)= βε (ve), βι (ve), βο (vo) etc. The correct response was scored 1 point. (*Cases excluded: when the CV syllable formed the respective letter-name, because it's not clear if the child confuses the name with the sound e.g. M= μι (letter-name-me) instead of /μ/-m)
Letter general knowledge	A response was taken as correct when the child: a) visually identified the letter within a word or a name (e.g. I have this letter in my name or in any other word, b) knew words that started with the target letter (e.g. ξ-ξίδι (ks-ksiði), μ-μαμά (m-mama)), c) knew names that started with the target letter (e.g. N-Νάσια (N-Nasia), E-Ελένη (E-Eleni)),d) identified or pronounced the target letter in consonant clusters (e.g. ρ-προ (r-pro), ν-ντο (n-ndo)), a syllable (e.g. α-μα (a-ma), ι-λι (e-le), ε-εψ (ae-aeps)), e) the order of the letter in the alphabet (e.g. ω is the last letter of the alphabet). The correct response was awarded 1 point.
Each letter was scored with 1 point whether there was a correct response either to letter-name, letter-sound, general letter knowledge or to all 3 of them	
Identification of the initial grapheme	Each item was awarded 1 point when it was accurate and 0 when it was not.
Phonological Awareness	
Phoneme blending	Each item was awarded 1 point when it was accurate and 0 when it was not.
Initial phoneme blending	Each item was awarded 1 point when it was accurate and 0 when it was not.
Concepts About Print	
Each item was awarded 1 point when it was accurate and 0 when it was not.	
Reading	
Single word reading	Each item was awarded 1 point when it was accurate and 0 when it was not.
Sentence reading	Each item was awarded 1 point when it was accurate and 0 when it was not.
Text reading	Each item was given 1 point when it was accurate and 0 when it was not

Error analysis in Reading	
Single word reading	The errors made in single word reading were categorised as follows: a) partial/irrelevant information used, b) letter/letter segments used, c) beginning letter/s used, d) final letter/s used, e) both beginning and final letter/s used, f) pronounced sounds without blending, g) name the letters only, h) no response
Sentence reading	The errors made in sentence reading were categorised as follows: a) contextual information used [1) substitutions, 2) insertions, 3) omissions], b) graphic information used (categorised in sub-categories (the same categories used in single word reading error analysis, except from the category of partial/irrelevant info used), c) partial/irrelevant information used, d) no response
Text reading	The errors made in text reading were categorised as follows: a) contextual information used [1) substitutions, 2) insertions, 3) omissions] b) graphic information used (categorised also in sub-categories (the same categories used in single word reading error analysis, except from the category of partial/irrelevant info used and the name the letters only categories, plus the mispronunciation category), c) partial/irrelevant information used, d) no-response
Spelling	
Writing own names	Children's spelling of their names was coded as 'yes' when their spellings were accurate and 'no' when they were not
Other names writing	Children's spelling of other names was scored based on whether they had tried to write other names but their own. Their spellings were coded as 'yes' when they had tried and as 'no' when they had not.
Spelling words	Children's word spelling was assessed according to the total number of the words that were spelled. Each word was awarded 1 point.
Spelling words correctly	Children's word spelling correctly was assessed according to the total number of the words spelled correctly. Each word was awarded 1 point

Error analysis in Spelling

Name and word spelling	The errors made in name and word spelling were categorised as follows: a) phonetic (e.g. use of phoneme-grapheme correspondences either correctly or incorrectly), b) non-phonetic (e.g. the errors did not represent graphemes), c) phonetic + non- phonetic (e.g. in cases where children spelled two or more words or names, d) correct + phonetic (e.g. in cases where children wrote two or more words or names), e) nonwords (e.g. they wrote 'invented' words, f) reversals (e.g. reversed letters), and g) no response
Analysis of the phonetic errors in names and words	The phonetic errors made in names and words were also categorised using sub-categories as follows: 1) letter/letter segments used, 2) initial phoneme used, 3) final phoneme used, 4) initial syllable used, 5) initial and letter/letter segments used, 6) final and letter/letter segments used, 7) both initial and final syllable used, 8) omission of phoneme/s-syllables, 9) addition of phoneme/s

Appendix 9: Greek Alphabet

A	Z	K	Π	X
B	Θ	O	I	Φ
Γ	Ψ	Λ	M	Ξ
Δ	N	Σ	Υ	Ω
E	H	P	T	
α	ζ	κ	π	χ
β	θ	ο	ι	φ
γ	ψ	λ	μ	ξ
δ	ν	σ	υ	ω
ε	η	ρ	τ	

Ένα ταξί ξεκίνησε

με μεγάλη ταχύτητα.

**Παραλίγο θα γινόταν
ατύχημα.**

**Ο σκύλος της κυρα-
Ξένης**

δεν ήξερε τα σήματα

και περνούσε με κόκκινο.

Appendix 11: Examples of children's misspellings

Spelling names

Type of error	Examples
Non-phonetic	ΚΑΤΕΡΙΝΑ(Katerina)-ΓΟΓ(joj), ΛΥΔΙΑ(Lithia)- ΟΦΟΦ (nonword), ΒΟΥΛΑ(Voula)-ΘΗ(thi), ΚΑΙΤΗ(Kaeti)-ΣΓΔ(sgd)
Phonetic	ΓΡΗΓΟΡΗΣ(Grigoris)-ΓΡΗΡΗΣ(Griris), ΓΙΑΝΝΗΣ(Jiannis)-ΓΟΙΣ(Gois), ΧΡΥΣΑ(Chryssa)- ΧΡΥ(Chry), ΓΕΡΑΣΙΜΟΣ(Gerassimos)- ΓΕΜΟΣ(Gemos), ΧΡΗΣΤΟΣ(Christos)-Χ(Ch), ΓΙΩΡΓΟΣ(Giorgos)-ΣΟΡ(Sor), ΣΤΕΛΙΟΣ(Stelios)- ΡΙΓΙ(Rigi), ΑΝΔΡΕΑΣ (Andreas)-ΑΝΔΡΑ (Andra), ΧΡΗΣΤΟΣ(Christos)-ΧΡΣ (Chrs), ΕΛΕΝΗ(Eleni)- ΕΝΙ(Eni), ΑΛΕΞΑΝΔΡΟΣ(Alexandros)-ΑΞΟΣ(Axos), ΑΝΤΩΝΗΣ(Antonis)-ΑνΤΝ(Antn), ΓΡΗΓΟΡΗΣ(Grigoris)-ΓΟΡΣΣ(Gorss)
Reversed letters	ΒΑΓΓΕΛΗΣ(Vangelis)-ΒΑΓΓΖΛΗΣ, ΛΕΩΝΗ(Leoni)- ΛΕΩΙΗ

Spelling words

Type of error	Examples
Nonword	ΓΦΓΥυ(nonword), ΕΙΑΕΛΟΣ(nonword), ΡΠΓΟ
Phonetic	ΜΠΑΜΠΑΣ-ΠΑΠΑ, ΓΙΑΓΙΑ-ΓΑΥΑΓ, ΠΑΠΠΟΥΣ-ΠΑΥΣΙ, ΠΑΡΑΘΥΡΟ- ΠΑΝΑΔΔ, Initial phoneme used ΓΑΤΑ-Γ, ΨΑΡΙ-Ψ, ΔΕΝΤΡΟ-ΔυαΑΔδ, ΜΗΛΟ-ΜΑΜ, ΚΑΛΑΜΙ- ΚΠΝ, Initial syllable used ΔΕΝΤΡΟ-ΔΕ, ΘΕΙΑ-ΘΙΟΣ, ΤΑΞΙΤΖΗΣ- ΤΑΧΓΟ, ΜΥΛΟΣ-ΜΥ, ΚΟΥΡΤΙΝΑ-ΚΟΥ, Both initial and final syllable used ΑΕΡΟΠΛΑΝΟ- ΑΕΡΟΝΟ, ΣΤΕΦΑΝΙ- ΣΤΕΝΙ, ΠΕΤΑΛΟΥΔΑ-ΠΕΔΑ, Omission of phonemes/syllables ΟΔΗΓΟΣ-ΟΔΓΣ, ΜΗΧΑΝΟΔΗΓΟΣ- ΜΗΝΓΣ, ΛΟΥΛΟΥΔΙ-ΛΛΔΙ, Final phoneme/syllable used ΜΗΛΟ-ΛΟ, ΨΕΙΡΑ-ΡΑ,

* A lot of children's misspellings could not be represented.

Appendix 12: Example of the analysis of a child's interview

- Hello Petrina! My name is Sophia and I would like to ask you a few questions about reading and writing such as whether you like reading, whether you can write anything, etc..... There are no correct or incorrect responses...Let's say that I am your friend and we are talking about reading and writing...Are you ready?
- Yes

Children's views on books and reading; which printed material they enjoy and why

- Petrina, do you like books e.g. fairytales, stories?
- Yes (quantitative response/put in table)
- What kind of books?
- The fairytales (indicates the kind-qualitative response/put in table)
- What kind of fairytales? The adventurous? The funny ones? The informative?
- The informative (indicates the kind-qualitative response/put in table)
- Why do you like these fairytales?
- Because I learn new things (indicates the reason-qualitative response/put in table)
- Which is your favourite?
- The Three Little Pigs (gives a title-qualitative response/put in table)
- Why?
- Because the best house was the one that was made from bricks
(indicates the reason but it does not add any info)
- Is there another reason?
- It makes me laugh (indicates the reason-qualitative response-put in table)

Children's home literacy and stimuli to reading and writing

- Do you have any brothers and sisters, Petrina?
- Yes, I have a brother who is two years old
(indicates that the sibling cannot act as a role model for the child)
- So you are older than him and you know more things than him, ha...?
- Yes..
- Does anybody tell you any stories at home?
- Yes (quantitative response/ put in table)
- Who?
- Mummy (indicates the person-qualitative response/table), when I go to bed at night (bedtime stories-quantitative response/put in table).
- Anybody else..?
- Sometimes grandma...(indicates the person-qualitative/put in table)
- Which is your favourite bedtime story?
- The Three Little Pigs (gives a title-qualitative/favourite story and bedtime story is the same/put in table)
- Why do you like this story?
- Because it makes me laugh...
(indicates the reason-qualitative/she repeats the same reason)
- Do they read the stories out, do they narrate them or both?
- They read them out...(indicates the way-qualitative/report it)

Children's practical experience of reading and writing something by themselves

- Have you tried to read a book on your own?
- No, (quantitative response/put in table)
- If you wish to read something, do you ask someone else's help?
- Sometimes, (indicates a positive response-quantitative/put in table)
I ask grandma's help.. (indicates the person-qualitative/put in table)

Children's home literacy and stimuli to reading and writing

- Are there any children's books at home?
- **Yes I have many books in my room...**(quantitative response/report it)
- Have you ever seen mum reading?
- **I have seen her reading** (quantitative-table) **magazines** (qualitative-table) **My dad reads** (quantitative-table) **only newspapers** (qualitative-table)
- Why do you think they are reading?
- **Because they want to get informed about the news** (indicates the reason-table)
- Any other reason?
- **They look at the pictures to pass their time..**(indicates the reason-table)

Reading in the children's school environment; their perceptions about the class teacher in initiating story-telling or any other activity and their responses

- Do you borrow any books from the school's library?
- **No** (quantitative-report it), **because the teacher does not let us** (indicates the reason-report it)
- Do you know why?
- **Because we might lose or destroy them...**(indicates more specific reason-report it)
- Does the teacher read you any stories?
- **Yes** (quantitative-table)
- Do you enjoy listening to stories in kindergarten?
- **Yes** (quantitative-table)
- Why do you think that the teacher reads stories to you?
- **So that we learn them and then read them to our friends** (indicates the reason-table)
- What stories would you like your teacher to read to you?
- **The Little girl with the matches** (gives title (fairytale)-table)
- Why?
- **So that we learn that we should help these people who are poor** (indicates the reason-table)

Children's perceptions about literacy and their practical experience of reading and writing something by themselves

- Why do you think that people learn to read?
- **So that we can read the books we have at home** (indicates the reason-report it)
- And for what other reason?
- I don't know....
- When do you think mummy and daddy learned to read?
- **When they were young...**(indicates the time- qualitative-report it)
- Where?
- **At school** (indicates the place-qualitative-report it)
- Who taught them how to read?
- **Their teacher** (indicates the person-qualitative-report it)
- How do you think you will learn to read?
- **At school from my teacher** (indicates place and person-qualitative-report it)
- When?
- **When I grow up** (indicates time-qualitative-report it)
- Have you tried to write a letter or a card to someone that you love? Let's say to mum and dad..
- **No** (quantitative-table)
- Have you ever tried but somebody else helped you?
- **No** (quantitative-table). **Only grandma writes the names of the whole family and I just copy them** (info about family's provision)
- Why do you think people learn how to write?
- **So that we learn new things and how they can be written** (reason-report it)
- When did mum and dad learn how to write?
- **When they were at primary school from their teacher** (indicates place and person-qualitative/report it)

- What about you?
- From my teacher in school (place and person-qualitative-report it)
- When do you think you will be able to write?
- When I grow up (time-qualitative/report it)
- Why?
- Because I will know more things then. (reason-report it)
- Do you know how to write the letters of the alphabet?
- Yes (quantitative/table)
- Who taught them to you?
- Grandma (person-qualitative/table)
- Do you know how to write your name?
- Yes (quantitative/table)
- Who showed how to write it?
- Mum (person-qualitative/table)
- Do you know how to write any words?
- No (quantitative/table)

Appendix 13: Example of the analysis of a teacher's interview

Teacher's professional and in-service training, and her teaching experience

- How long have you been teaching?**
- Around 12 years
- How many years did your professional training last?**
- Two years
- Have you received any in-service training?**
- I participated in several seminars that were organised by LEA. One was about specific learning difficulties and the rest were generally about educational issues such as how to cope with children's behavioural problems, how to develop effective teaching etc.
- Have you done any other studies?**
- Yes. I have a bachelor degree in Chemistry.

Teacher's teaching practices and her views on teaching literacy in kindergarten

- How much time do you spend on literacy activities: a) daily, b) weekly?**
- We deal with literacy approximately three hours per week and 40 minutes every day.
- Do you have the adequate materials within school for teaching literacy? If yes can you specify what?**
- There is enough material for teaching literacy e.g. books (pictorial and textual), audiovisual equipment (tapes with songs and fairytales), commercial literacy games (cards with letters and words, pictures or even cubes with letters etc.)
- Are children able to borrow books from kindergarten's library?**
- No, because they have their own books at home and sometimes they bring their books at school. Children may not be able to borrow the books, but they can riffle through their pages on their own or listen to the stories that we read to them, look at the pictures. These books were regularly replenished in order to stimulate children's interest.
- Do you have to prepare your own materials for literacy teaching?**
- Every school year I give a list to the director of the school and I inform her that I am going to do some tasks that I have developed or I have borrowed from books that are not the teacher's handbooks and I am going to use materials that I have made such as cards with pictures and words.
- You told me that you use other books, apart from the teacher's handbooks, in order to find material for literacy activities. Do you think that they are not enough for a teacher to organise her literacy teaching?**

- ❑ Yes I use some other books and I keep finding new tasks to apply to the class, because I don't like the repetition and children find the repeated tasks very boring. So if literacy for them is boring then what a teacher does is really a failure. I believe that these handbooks could suggest more tasks so that the teacher has the opportunity to get more ideas.
- ❑ **Are they helpful to you?**
- ❑ That's what I am saying. Teacher's books are just for getting an idea of what you could do; the others books give you ideas about the tasks and how the teacher can initiate some new ones.
- ❑ **From your point of view what are the kindergarteners' responses to literacy activities?**
- ❑ Children are very much interested in learning the mechanisms of literacy and managing to use them. Usually there are children who at the end of the school year they manage to read and write and some others that they seem willing to learn, but they need some more time to do it.
- ❑ **Why do you think that this is?**
- ❑ The differences result mostly from their home backgrounds, their level of maturity and many other factors.
- ❑ **Such as?**
- ❑ Their motivation, their personal interests and their character, I would say. Children who are more reserved than others usually hesitate to take part in new activities.
- ❑ **Do you adapt the content of the literacy tasks according to children's abilities, skills, age...?**
- ❑ I focus more on the older kindergarteners without implying that I ignore the young ones. I just don't have the same expectations. In what I am interested more is to just hear some of what the older ones say; even if it seems that they do not participate they learn a lot of things. Sometimes some of them ask to take part in what the older ones do because they feel they can do it. I don't care about the result; the attempt is what counts for me.
- ❑ **Can you give some examples of the tasks you do during the literacy hour?**
- ❑ Regarding writing, apart from teaching them the different kinds of lines, I use lists of words, cards with letters, I am writing words on the blackboard...so basically at the beginning is the motor-visual stage and gradually we move on to the stage of decoding. We begin from the simple ones and gradually we do more difficult tasks. The first thing that we deal with is their names. They learn how to find their names among others, to circle them in the lists etc. Then I focus on teaching them how to read words visually, without applying any phonics. I repeatedly read words to them so that they can link the words' visual representation to their phonemic representation. After they have learnt the concept of the word I teach them the concept of the sentence, while simultaneously I teach them how to visually read small sentences, which are basically fairytale titles. I write on the blackboard some fairytales' titles, I read them out and then I ask them to find the one I am asking for; or I use a list of groceries

and children try to find each item or I take the newspaper and we try to find the capital letters, which we name them and sound them out etc. Also I teach them the names and the sounds of the letters. Every time you have to renew your ideas. Basically, I use their daily experiences from school to initiate some literacy tasks. For example if we have talked about animals I write on the blackboard animal names and we play with their letters.

- ❑ **Do you think that the holistic method of literacy teaching is better than teaching children how to break up the words into their letters and sounds and how to blend them?**
- ❑ I believe that is better for the child to have first a whole image of the word and then break it into smaller units. I think that the age of these children dictates starting from something easy such as the whole view of a word and then try to immerse them into the units that constitute a word, which is more difficult and complicating.

The implementation of the new curriculum regarding literacy in kindergarten and the ways they deal with it; parents' role in children's literacy learning as perceived by the teacher

- ❑ **Are there any tasks proposed by the new curriculum that you think that are not appropriate for kindergarteners?**
- ❑ There aren't any difficult tasks. It's a matter of what steps you follow when you teach literacy to young children. It's very important to go slowly and gradually raise the range of difficulty. First you have to make the child understand what literacy is by using all his/her senses and exercise his/her mental and motor skills. Then you have to help him/her think about literacy, work on it and develop his/her skills. Literacy cannot be taught in kindergarten in a similar way to that in primary school
- ❑ **According to your experience have you noticed any changes in the way that children develop their knowledge of literacy comparing the old curriculum with the new one?**
- ❑ There is a difference between the old and the new curriculum. Personally I prefer the new one, because it initiates children into the investigation and the use of oral and written Greek language. The new curriculum facilitates children's self-action; it broadens their way of thinking and refers briefly to a large amount of knowledge that the child will learn during his school-life, by just auditing it. The main focus of this curriculum is that everything should be presented as a game, to help the child explore the world of knowledge and realise his attitude towards it. Through this, the child is able to show his skills and develop them even more. There isn't any kind of force and most of all is flexible regarding the tasks' content, order and range.
- ❑ **Do you think that children at the age of four and five years old are ready to receive literacy teaching? Why?**

- ❑ I think they are ready provided that the child has the right incentive. We don't expect him to learn reading and writing as the children in primary school do, but it's my opinion that he has the ability to learn the basic things such as the alphabet, the sounds, the directionality of reading and writing, etc.
- ❑ **Do you think that learning literacy in kindergarten facilitates children's performance in primary school? Why?**
- ❑ I believe that it's effective though it depends greatly on children's maturity, skills and attitude towards literacy. In order to have successful results it's very important for the child to feel confident and have great interest for what he is doing. The role of kindergarten is to prepare the child for primary school and not substitute it.
- ❑ **Have any changes been made in the content of literacy tasks, since the new curriculum has been implemented? If so what?**
- ❑ I think there are some things that have changed and are what I mentioned earlier. The way that literacy was taught was much different and stereotyped. Now the proposed tasks help children to develop more their skills and move further than pre-literacy activities.
- ❑ **Have you received any guidelines regarding the way that literacy should be taught in kindergarten?**
- ❑ We haven't received any guidelines in the way you mean. I have attended a number of seminars, but the most helpful is that I try to get informed by studying a lot about literacy and adopt new ideas and new methods. When I first got an idea of the new curriculum was at the University of Thessalia, where I was working as a tutor assistant. That was my first experience that proved to be very significant and very helpful to me. There I learned more about other curricula in Europe and got more ideas about early literacy teaching.
- ❑ **Are there any tasks that children find difficult? Why do you think that this is?**
- ❑ Sometimes children complain that they can't read or write a word or they don't want to. This should not be taken into account, because it's just the first reaction towards something new. In the second attempt things are better and children seem to show a more positive attitude.
- ❑ **Are there any specific tasks from those you do that cause them difficulties?**
- ❑ I try not to do tasks that in my opinion are difficult for them, because I don't want to frustrate them. The tasks are usually of medium degree of difficulty.
- ❑ **What about the children that say that they are not able, because they very young?**
- ❑ We have such examples. I don't want to push them, that is why I don't force them to take part or complete a task.
- ❑ **Do you think that this is only because of children's immaturity or it might be for another reason?**
- ❑ It may be because of children's immaturity or it may be because of the amount of literacy knowledge that they receive. Sometimes I think that the number of the pre-literacy activities

that we apply is far too much for them. However, it's my opinion that children have the skills to deal with literacy even at such a young age.

- ❑ **In your opinion are there any changes that should be done in the curriculum of the first and second grade of primary, since the implementation of the new curriculum of kindergarten?**
- ❑ I don't know either of them. From what I have heard from primary teachers they have some weaknesses and they need to be improved, but I cannot answer to this question, because I don't have any idea about them.
- ❑ **Taking into account the changes in the curriculum of kindergarten, do you think that it would be essential to change some points of the other two, so that there won't be any chance of repeating the same things in both kindergarten and first grade or first grade and second grade respectively?**
- ❑ Based on that, there many changes that should be made, so that children's interest will be kept alive.
- ❑ **Does this mean that kindergarten aims to substitute the first grade?**
- ❑ Of course not. It would be a great mistake if the authorities did that. Kindergarten should prepare children in such a way so that they will be ready to receive formal literacy teaching when they go to primary. Each one (kindergarten/primary) has its own aims and we should focus only on these.
- ❑ **Do you think that the way the new curriculum is implemented serves the aims it puts forward?**
- ❑ I would say that it serves them though there are some things that could be improved, so that they would be more effective.
- ❑ **Such as?**
- ❑ First, the authorities should have given us some guidelines regarding the ways that we should teach early literacy. If I hadn't attended some seminars on my own initiative or hadn't read some books about young children's literacy I would have been totally ignorant. Ignorance is not a very good guide to a teacher's teaching. Every teacher is left to her own devices to organise her literacy teaching and 'interpret' the teacher's handbooks in her own way. If they had given guidelines about how the curriculum should be implemented by the teachers, any misinterpretations could be avoided.
- ❑ **Do you think that home literacy plays a significant role in children's literacy learning?**
- ❑ Certainly. These children who come from a highly educated home background seem to learn more quickly and in depth. They already have some literacy experiences, which they develop within schooling and they reach a point where they gradually realise the mechanisms of ciphering and decoding of language. Another point is that they ask more questions and they are more curious about everything.

- ❑ **What about the other children?**
- ❑ I believe they are passive recipients of what they hear; they haven't learnt to ask questions, they don't seem to be interested in learning something new. Apart from what we do in school I don't think that they do anything more.
- ❑ **Are parents specifically interested in their children's performance in literacy? In what way?**
- ❑ They show an interest but they don't think that literacy is something that should be taught in kindergarten. They believe that literacy acquisition will surely be made in primary school, so there is no reason to be worried.
- ❑ **Don't they ask you for any advice regarding the way they should deal with their children's literacy?**
- ❑ Of course they ask me, but I advise them not deal with it, because I work with a certain system based on a number of tasks, for which I inform them, and I don't want to have any interference from the parents; children will get confused and I won't be able to do my job properly. At the end of the school year, when I have already finished with my literacy programme, I inform them about their children's performance and advise them on what they should do to develop and improve their skills, or even cope with any problems.
- ❑ **What is your opinion about the teachers' handbooks that the Pedagogic Institute supplied to you and their contents? Are they helpful?**
- ❑ They are helpful in terms of providing the framework within which the teacher should plan her literacy tasks. They have some weaknesses and one of them is that they don't give any task examples from the Greek language but from Spanish. The child is basically in a labyrinth and the teacher is asked to lead him. It is very difficult for a young child to learn that what he sees can be read. The new curriculum is very effective and much better than the old one, but it's still in its initial stage and it needs a lot of improvement and much further research.
- ❑ **It's still in an experimental stage and its effectiveness should not be judged until we see children's performance in the second grade. Do you think that moving further than the pre-literacy stage is it tiring for the child or even more forcing?**
- ❑ I don't think that forces him. It's simply a framework within which the child should construct his literacy knowledge. In any case the literacy tasks that are proposed do not need a lot of effort and skills.
- ❑ **Is there anything that you would like to discuss and it has not been mentioned?**
- ❑ No, I think we covered everything.