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CONTEXTS FOR LEARNING TO BE LITERATE:
SOME EVIDENCE FROM GREEK PRE-PRIMARY
EDUCATION SETTING

ABSTRACT. The purpose of this article is to investigate two interconnected facets of literacy development and more specifically the interplay between reading and writing development. Given the rather poor literacy practices in Greek pre-primary education, our intervention during “reading–writing workshops” (engagement of children in meaningful literacy activities as socially situated written texts) showed that changes towards literate practices occurred in both age groups (4–5 and 5–6 years old) under investigation. Significant differences in literate performances have also been found between second year pupils who had attended first year class and those who had not. We discuss the contribution of pre-primary education to the development of literacy, as well as some educational implications concerning the Greek pre-primary school.

KEY WORDS: emergent literacy, greek importance of schooling to early literacy development, pre-primary education, reading/writing interplay

1. INTRODUCTION

As Halliday (1996: 340) points out, the use of the term *semiotic literacy* instead of reading and writing means that, “*in becoming literate, you take over the more elaborated forms of language that are used in writing – and the social values that goes with them*” moving up to a higher model of meaning located in the overall social context. The term *literacy* has been largely dissociated from reading and writing to cover all forms of discourse: spoken as well as written. In other words, literacy means any kind of effective participation in social process (Kress & Van Leeuwen, 1990). These approaches to literacy show the inconsistency of the traditional model of literacy which presumes that reading and writing constitute psychological skills related to the production and interpretation of decontextualized written language (Biber, 1998). Moreover, according to this traditional model, spoken and written language are seen as two distinct systems of transmitting meaning, while literacy is defined as a process dependent mostly upon the acquisition of metalinguistic competence. Alternative models of literacy instead give emphasis to a socio-cultural perspective that

suggests the attention should be directed to the processes of written language as a part of a more generalized social semiotic process (Cope & Kalantzis, 1993). Simply, writing must be situated in activities within which the resulting text – as a social semiotic artifact – plays a significant role and is functional with respect to the joint activity in which the writer is involved. Moreover, it must include an interesting topic for the writers who believe there is more to discover and “*must be able to count on the community to give help in accessing textual and other relevant recourses and in providing support and guidance as this is felt to be necessary*” (Wells, 1999: 289). These conditions seem to be of crucial importance for the ways school practices could build bridges between children’s everyday semiotic ways of constructing experience and less familiar literate practices and attitudes.

1.1. *Emergent Literacy*

Our concern here is to interrelate these general assumptions about literacy with *emergent literacy*. The term emergent literacy is used in a broader way in order to cover all those “*behaviors that precede and develop into conventional literacy*” (Sulzby, 1989a: 84). Moreover, Sulzby and Teale (1996: 728) state:

emergent literacy is concerned with the earliest phases of literacy development, the period between birth and the time when children read and write conventionally. The term emergent literacy signals a belief that, in a literate society, young children – even 1 and 2 years old – are in the process of becoming literate.

Over the past 20 years the concept of *emergent literacy* has been gradually replacing the traditional notion of *reading readiness*, associated with writing/reading skills, which underpinned the former curricula. Based on a considerable body of research from many fields (linguistics, sociolinguistics, psychology, education), emergent literacy has virtually redefined the field of literacy by describing adequately what is happening during the literacy development of young children. Emergent literacy suggests that the development of literacy is a dynamic and evolving procedure taking place within the child under the right conditions (Hall, 1987); it is a gradual process with no identifiable starting point. One basic assumption of emergent literacy theory is that learning to read and write are strongly interrelated processes (Clay, 2001; Glazer & Burke, 1994; Hall, 1987; Miller, 2000), which occur simultaneously and naturally as young children try to construe written texts. In this perspective, reading and writing are not considered two different abilities but rather two aspects of the same language system (Dobson, 1989), which mutually reinforce each other in becoming literate (Goodman & Goodman, 1983; Teale & Martinez, 1989; Teale & Sulzby, 1989). Another assumption is that reading and writing develop from real situations in which

they are embedded. The literacy experienced by children in their homes is functional, meaningful, authentic and embedded in everyday activities (e.g. Hiebert, 1986; Morrow, 1994; Topping & Wolfendale, 1995; Whitehurst & Lonigan, 2001). Through active engagement, exploration and experimentation, children begin forming concepts about the nature and patterns of written language, thus emphasizing the role of the adult (parent, teacher) in fostering the child's development of the literacy process, rather than helping the child get the "right" answer, as presented by emergent literacy. (Clay, 1991; Vygotsky, 1978).

In fact, children are engaged in literacy events from the very beginning of their lives. That is, they find meaning in informal orally activated every day events and activities as a direct relationship between discourse and context (contextualized). However, their linguistic-semiotic development within a social context implies that they have to participate in more formal linguistic activities, which implies a more indirect and complex (decontextualized) relationship (e.g. Cloran, 1994; Hasan, 1996).

Much research in joint activities/interaction between caregivers and young children indicate how "pre-school literate practices" are critical for the development of school literacy, as they provide a solid basis for the development of a classroom pedagogy (Rothery, 1996). Through interaction with caregivers, children begin to form their literate practices (or, "contexts for learning", according to Cloran, 1999). Also, differentiated socio-cultural family positioning creates different contexts for learning. So, not all children entering schooling can clearly establish the same relationship to school literacy practices (see, e.g. Williams, 1999). Therefore, pre-primary education, as an intermediate stage between pre-school and primary school, seems to be of enormous significance in "scaffolding" this kind of socio-cultural differentiation by enhancing pupils' attitudes towards literacy (Papoulia-Tzelepi, 2001).

Our purpose here is to investigate some of these issues by focusing on the case of a pedagogical framework in Greek pre-primary education.

1.2. The Greek Pre-Primary Educational Setting

Compulsory education in Greece starts at the age of 6; attendance of pre-primary education (4–6 years) is voluntary. Nevertheless, pre-primary enrolment of 4 year old students seems to be quite high (57.6%) and mass enrolment is observed at 5 years of age (88%) (Eurostat, 2002). Pre-primary institutions, public or private schools, provide education-oriented care for young children and recruit staff with specialized qualifications in education. Pre-primary education is officially divided into two age groups (4–5 years old, and 5–6 years old). But, as classes operate with one teacher, children from both age groups necessarily co-exist in a single classroom. Even though

an effort is made to differentiate activities according to pace and level of difficulty in order to cover the special needs arising from the characteristic features of each age group, in general children of both ages work and are taught all together. Only in big or private schools is an effort made to create classes on the ground of age.

The same official curriculum is practiced in all the schools. It supports the idea that pre-primary education should help children “*to develop the ability to understand and express themselves through symbols generally, and in the realms of language, mathematics and aesthetics in particular*” (Act 1566/1985). One main objective of its new version (Ministerial Decree C1/58, 1999), inspired mainly by the work of Ferreiro and Teberosky, supports the emergent literacy perspective the presupposition of which has already been described.

Nevertheless, in practice the previously more traditional approach, based on reading readiness theory (cfr. Papoulia-Tzelepi, 2001), seems to be well established (cfr. Giannikopoulou, 2002). Due to limited training and knowledge about the emergent literacy theory and the strategies they could practice in their classes, it seems to be difficult for teachers to embed literacy practices in daily school activities. It appears that traditional assumptions of literacy as teaching conventional reading/writing reinforces the hidden curriculum in which, contrary to the official position, educators continue to adopt a teacher-centered, skill-oriented and product-focused model. Teachers seem to view literacy as a skill to be taught, rather than a knowledge that could emerge through whole language activities (Goodman; Watson & Burke, 1987); hence, they persist in skill-orientated activities.

Until recently, the relevant research in Greek context seems to follow the reading readiness theory for the development of literacy. Even though during the last thirty years a vast amount of evidence in many different alphabetic languages supports the perspective of emergent literacy theory, in Greece the relevant research has a rather limited scope, namely metalinguistic awareness (Manolitsis, 2000; Papoulia-Tzelepi, 1997; Porpodas, 1999). In Greek literature there is a limited number of research about writing (Stellakis, 1998; Tantaros & Vamvoukas, 1997; Theodorakakou, 1999) or reading (Gana, 1998; Kutsuraki, 2001) in pre-primary education.

1.3. *Research Questions*

We undertook this study to investigate:

- literate performances (*writing* and *reading*) of pre-primary aged children in a Greek school setting and its development over a school year time;
- the effect of *school attendance* to this development;

TABLE 1
The subjects according to age and first year class attendance.

Age group	Years of schooling	
	1	2
Young (47–61, mean: 54 months)	<i>N</i> = 66 (Group 1)	
Older (54–71, mean: 64 months)	<i>N</i> = 66 (Group 2)	<i>N</i> = 64 (Group 3)

- the *interplay* between reading and writing which are considered to be strongly interrelated processes.

Our concern about literacy practices in Greek pre-primary education prevented us from considering literacy knowledge by observing common school activities. Thus, we attempted to create literacy workshops by engaging children in meaningful socially situated practices (Teale, 1987), during which they could be motivated to demonstrate as much as possible of the spectrum of their literacy knowledge.

2. METHOD AND PROCEDURE

One hundred and ninety-six pupils from eight public and three private pre-primary classes in different areas of Patras participated in the study.¹ The average number of pupils in a class was 18, all native speakers of Greek. Informal observations by the researcher and teachers indicated these children were at least of average performance in oral language development.

The subjects were divided into three groups: the age and the years of pre-primary school attendance (Table 1).

The literacy program of the classes under consideration was typical of Greek pre-primary schools described earlier. Children had access to books and writing materials. There were blocks and pencils in the playing corners, the teachers read to them regularly and they were encouraged to write whatever they liked, especially their names or comments on their drawings. Apart from those practices no special literacy activities other than copying some words (such as names and dates in their drawings) occurred. In the second semester, some activities about first phoneme isolation and its graphemic correspondence took place in all classes, but they were

¹Even though variables such as the socio-economic status of the family, the level of maternal education and the family literacy practices seem to be crucial for the emergence of literacy (e.g. Heath, 1986; Kutsuraki, 2001; Tafa, 2001) in this paper we are not going to analyze them.

teacher-initiated and they resembled activities typical for Grade 1 classes, thus not attracting much interest by the children.

Such “traditional” teaching practices are not authentic and purposeful for the children. Under these conditions it would be difficult to observe and then assess emergent literacy skills of the children. Hence, to collect our data we carried out active language activities. Working in literacy workshops, we tried to engage children in meaningful communicative practices, conceptualized in this case as whole-language activities, during which they could be motivated to write and read a text. We tried to make the activities of data collection sessions as authentic and functionally motivated as possible by introducing a problematic situation with a relevant story through which children had to discuss and find by themselves the best solution. The main part was to compose a text.

The collection of data took place in two periods during the school year: the first during the first fortnight of November; the second one during the second fortnight of May in 2000–2001. Each period included two one-week sessions. During the first session of each period, a written list was triggered, while the second session the activity led to the writing of a message.

We chose lists and messages because these two text types, excluding narratives, are probably the most frequently observed by children of that age in both their family and wider social environment and are used a lot by children in their activities both at home and school (Chapman, 1994; Zecker, 1999). Moreover, these two kinds of texts differ in structure and function as far as different communicative purposes are expressed by different text types (Dyson, 1985). Under this condition, the way children were supposed to arrange the words in the space of the page depends on the content, communicative purpose, and expectations of the audience. Moreover, it is supposed that reading of a list implies the reading of some words without textual cohesion, while reading of a message implies the reading of a full text.

In the first session of the first period (November 2000) children were told that the mayor of the city asked for their help in choosing toys for some children of their age and he would be very grateful if they could give him a clue of their favorite toys by writing it down on a piece of paper. In the second session, after hearing a relevant story with a castaway, they had to write a message asking for help.

In the first session of the second period (May 2001), after a discussion on possible holiday destinations, the children wrote the things they would like to take with them in order to help their mothers pack their luggage. In the second session they had to write the message a wounded child had sent to his/her parents with a dog, after breaking his/her leg on the way back home.

The play element of the activities was always stressed, allowing creativity and imagination to be activated.

The role of the researchers and the teacher was limited during writing activities. We just replied to questions such as “Do I have to start from here?” or “Could you show me the /p/?”, but even then not straightforwardly. In these cases we could reply “Where do you think we start writing?” or “Whose name starts with a /p/?” After each session children read their writings to their classmates. All four sessions were videotaped.

3. CATEGORIZATION OF WRITING AND READING

Different categorization systems were applied to score reading and writing performance. Some examples of written samples and reading performances of our data are presented in Appendix.

3.1. *Writing Performance*

The children’s writing was classified using a modified version used by other scholars (Ehri, 1999; Ferreiro & Teberosky, 1982; Gorman & Brooks, 1996; Sulzby, 1989b; Temple, Nathan, Temple & Burris, 1993) in seven levels ranging from the simpler emergent writing systems to conventional writing:

3.1.1. *Pre-Alphabetic Phase*

- (1) *Drawing*: The child draws. S/he may write his/her name, but there are no other marks except from drawings. The children themselves do not consider it writing.
- (2) *Scribbling*: The child writes scribbles, which are arranged in rows across the page and in many cases they are composed by loops and tall sticks repeated over and over again or imitate handwriting. The children characterize these scribbles as writing (See Example 1 in Appendix).
- (3) *Letter-like strings*: The child writes with marks that resemble the acceptable letters, but may also include other symbols (See Example 2 in Appendix)
- (4) *Letter strings*: The writing is composed by the letters of the alphabet. The majority comes from the name of the child. Usually children use upper cases. The letters cover all the row or form groups of three to eight letters for a word (See Example 3 in Appendix).

3.1.2. *Partial Alphabetic Phase*

- (5) *Some letters of the word*: The child knows that letters represent phonemes and tries to segment words into them and then to write them down. At an initial point they write only the first letter or only some of them – mainly consonants (See Example 4 in Appendix).

3.1.3. *Full Alphabetic Phase*

- (6) *Entire phonetic spelling*: The child writes all the phonemes of a word or phrase. In some cases there are no spaces between the words (See Example 5 in Appendix).

3.1.4. *Consolidated Alphabetic Phase (Partial Orthographic Phase)*

- (7) *Transitional orthography*: The child tries to apply the orthographic rules in his/her writing (See Example 6 in Appendix).

3.2. *Reading Performance*

After children had finished writing, they were asked to read or encouraged to “pretend” to read their writings to the class. All four transcribed readings were classified accordingly to a simplified version of Sulzby’s (1989b) classification in the following levels, which range from systems governed by the drawings to systems governed in any extent by the print:

- (1) *Refusal*: The child refuses to read even though s/he may have written some marks, symbols or letters (See Example 2 in Appendix).
- (2) *Labeling or Narration*: The child labels the items s/he has drawn or narrates the story based on what s/he has drawn (See Example 3 in Appendix).
- (3) *Oral monologue*: The child says what s/he has written without keeping his/her eyes on the paper. The intonation is flowing, like that expected in oral story-telling. The response is closely to what is expected to be written (See Examples 1 and 4 in Appendix).
- (4) *Reading-like monologue*: The child “reads” what s/he has written showing with his/her finger. The intonation sounds like conventional reading.
- (5) *Conventional*: The child reads conventionally (See Examples 5 and 6 in Appendix).

Inter-rater agreement determined after one researcher and a trained post-graduate student judge scored the complete body of data. Agreement across the two data collection dates and categorization systems was 97%, and final agreement was achieved through discussion.

4. RESULTS

4.1. *Writing Performance*

The writing performance of all three groups in both periods is presented in Table 2. For this part of analysis we took into account the most mature

TABLE 2
Classification of writing of the three groups in both periods.

Level of writing	Group 1 (<i>N</i> =66)		Group 2 (<i>N</i> =66)		Group 3 (<i>N</i> =64)	
	1st period	2nd period	1st period	2nd period	1st period	2nd period
1	6.1		7.6	3	1.6	
2	21.2	4.5	13.6	1.5	1.6	
3	39.4	13.7	27.3	7.6	18.7	
4	27.3	62.1	50	72.7	50	37.5
5	4.5	16.7	1.5	12.2	21.9	23.4
6	1.5	3		3	4.6	37.5
7					1.6	1.6
Total	100	100	100	100	100	100

written sample of every subject of each period. This was the case, for example, of some children who wrote some letters of a word in the list but they wrote letter strings and their names in the message, or preferred to write just the words they knew how to write in a logographic way (such as MAMA, other names or common logotypes). Even though some children seemed to be aware of the alphabetic principle governing written language, when faced with a difficult orthographic task they resorted to less mature symbol systems or restricted their writing to a few words and then completed this with letter strings.

In the first period the majority of Group 1 wrote with letter-like strings (39.4%), more than one fourth (27.3%) with letter strings and just a few (6%) could apply the alphabetic principle (that letters represent certain speech sounds-phonemes). The percentage of scribbling (21.2%) seems, also, to be relatively high, while only 6.1% were content with drawings.

The majority of Group 2 (50%) wrote with letter strings, more than one-fourth (27.3%) with letter-like strings, only a few (13.6%) wrote by scribbling or drawings (7.6%). What was unexpected is that only one child could apply the alphabetic principle.

It is noteworthy that the findings of Groups 1 and 2 are supposed to reflect to some extent, the family literacy practices since these children had not been involved in any school literacy program before entering pre-primary education. The findings support the general assumption that children come to pre-primary education having an amount of knowledge about what writing is and how it works, which is not to be underestimated.

Half of Group 3 used letter strings and 18.7% letter like strings. Just one child was content with drawings and one scribbled. It is noteworthy that 28.1% of this group used the alphabetic principle to some extent; 21.9%

wrote some of the letters of the words; 4.6% wrote all the phonemes of the words and one child applied some orthographic rules.

In the second period the vast majority of Group 1 (62.1%) wrote with letter strings, and just a few scribbled (4.5%) or produced letter-like strings (13.7%). The percentage of those who thought letters stand for sounds had risen to 19.7%.

In Group 2, the majority (72.7%) wrote with letter strings, a few with letter-like strings (7.6%), two children used drawings, and one scribbled, while those who could apply the alphabetic principle in their writing rose to 15.3%.

In Group 3 the majority (62.5%) applied the alphabetic principle in any extent, more than half of which wrote all the phonemes of the words. The rest 37.5% wrote by letter strings.

Table 3 presents the means of each group in both periods. Figure 1 clearly demonstrates that all the groups made almost the same jump forward (effect sizes: Group 1: 0.92, Group 2: 0.84 and Group 3: 0.95). The data are also analyzed with a repeated measurement design. The analysis of the data showed statistical significant differences between the means of the two periods (effect of time) ($F=175,952$, $df=1$, $P=0.000$). This means that, as expected and mentioned before, as time progressed all three groups moved to more mature levels of writing. Moreover, a statistical significant difference exists between the writing performance of the three groups (effect of group) ($F=35,235$, $df=2$, $P=0.000$).

In order to analyze the findings in depth a Sheffe test was applied. The Sheffe test (Table 4) revealed that Group 3 outscored the other two groups (Table 5). The findings showed that those children who attend pre-primary education at a young age (Group 3) have a very large advantage over those children that enter pre-primary education a year later (Group 2). Unexpectedly, the findings indicate no difference between Group 1 and Group 2. It is plausible then to assume that age is not the significant factor for the development of literacy skills. What our findings eventually suggest is that

TABLE 3
Mean and SD of writing performance in both periods.

	<i>N</i>	First period		Second period	
		Mean	SD	Mean	SD
Group 1	66	3.14	1.18	4.2	1.11
Group 2	66	3.26	1.01	4.14	1.08
Group 3	64	4.37	1.35	5.66	1.36

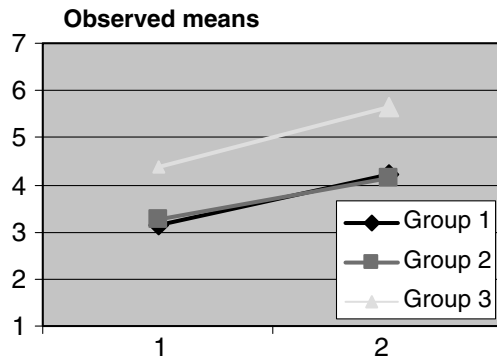


Figure 1. The evolution of writing performance of the three groups in both periods.

TABLE 4
Scheffe test on writing performance.

(I) Group	(J) Group	Mean difference (I - J)	SE	Sig.	95% Confidence interval	
					Lower bound	Upper bound
Group 1	Group 3	-1.35*	0.183	0.000	-1.80	-0.90
	Group 2	-0.03	0.182	0.986	-0.48	0.42
Group 3	Group 1	1.35*	0.183	0.000	0.90	1.80
	Group 2	1.32*	0.183	0.000	0.87	1.77
Group 2	Group 1	0.03	0.182	0.986	-0.42	0.48
	Group 3	-1.32*	0.183	0.000	-1.77	-0.87

Based on observed means.

*The mean difference is significant at the 0.05 level.

TABLE 5
Subset of Scheffe test for alpha (Scheffe^{a,b,c}).

Group	N	Subset	
		1	2
Group 1	66	3.67	
Group 2	66	3.70	
Group 3	64		5.02
Sig.		0.986	1.000

^aUses harmonic mean sample size = 65.320.

^bThe group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

^c $\alpha = 0.05$.

pre-primary school attendance is a more crucial factor for early literacy development than home literacy.

4.2. Reading Performance

The reading performance of all three groups in both periods is presented in Table 6. For this part of analysis we took into account the most mature reading system employed by every subject in each period.

During the first period the majority of Group 1 read by oral monologue (50%), almost one-fourth by reading-like monologue while 6% read conventionally. 9.1% of the children transferred the communicative condition to the narration of the story or to the labeling of the objects. 9.1% refused to read. This percentage of children who refused to read is significantly higher in comparison to other groups.

In Group 2 just 3% refused to read, 22.7% chose narration of labeling, while the percentages of those who read by oral monologue or reading-like monologues are almost equally distributed (34.9% and 36.4%, respectively). Lastly, a few children (3%) could read conventionally.

In Group 3, the majority of the children read by reading-like monologue (42.2%), 21.9% by oral monologue, 7.8% by narration or labeling and 3.1% refused to read. It is noteworthy that 25% could read conventionally.

During the second period only 1.5% of Group 1 refused to read and three pupils used narration or labeling. The majority read by oral monologue (33.3%) or reading-like monologue (44%) and the percentage of those who could read conventionally had risen to 18.2%.

The majority of Group 2 read by reading-like monologue (48%), 17.3% by oral monologue, while just 4.1% contented to narration or labeling and 0.5% could not read. The percentage of those who could read conventionally had risen to 30.1%.

TABLE 6

Classification of reading performance of the three groups in both periods.

Level of reading	Group 1		Group 2		Group 3	
	1st period	2nd period	1st period	2nd period	1st period	2nd period
Refusal	9.1	1.5	3	0.5	3.1	
Labeling-narration	9.1	3	22.7	4.1	7.8	1.6
Oral monologue	50	33.3	34.9	17.3	21.9	4.7
Reading-like monologue	25.8	44	36.4	48	42.2	32.8
Conventional	6	18.2	3	30.1	25	60.9
Total	100	100	100	100	100	100

In Group 3, the majority of the subjects (60.9%) could read conventionally by the end of pre-primary education. About 32.8% read by reading-like monologue and just 4.7% by oral monologue and 1.6% by labeling or narration.

In Table 7, the means of each group in both periods is presented. As clearly demonstrated in Figure 2, all groups improved (effect sizes: Group 1: 0.85, Group 2: 1.12 and Group 3: 0.89). The data are also analyzed with a repeated measurement design. The analysis of the data shows statistically significant difference between the means of the two periods (effect of time) ($F=93,431$, $df=1$, $P=0.000$). Moreover, there is a significant statistical difference between the reading performance of the three groups (effect of group) ($F=21,335$, $df=2$, $P=0.000$). In order to analyze the findings in depth we applied a Sheffe test (Table 8) which revealed that Group 3 outperformed the other two groups (Table 9). The findings for reading showed exactly the same pattern for writing. Those children who attended pre-primary education at a young age (Group 3) have a considerable advantage over their peers that enter pre-primary education a year later (Group 2). It is noteworthy, even though not statistically significant, that at least for the acquisition of reading abilities, older students (Group 2) seem to develop faster than children of younger age with the same time of schooling (Group 1).

TABLE 7
Mean and SD of reading performance in both periods.

	N	First period		Second period	
		Mean	SD	Mean	SD
Group 1	66	3.11	0.98	3.74	0.85
Group 2	66	3.14	0.91	3.83	0.74
Group 3	64	3.78	1.02	4.53	0.67

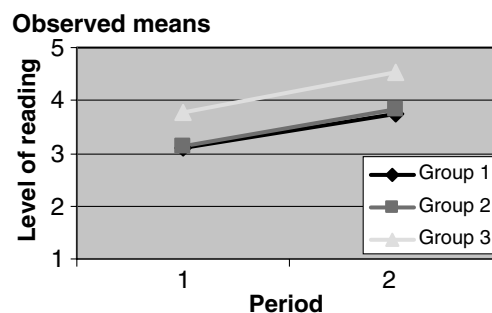


Figure 2. The evolution of reading performance of the three groups in both periods.

TABLE 8
Scheffe test on reading performance.

(I) Group	(J) Group	Mean difference (I – J)	SE	Sig.	95% Confidence interval	
					Lower bound	Upper bound
Group 1	Group 3	-0.73*	0.124	0.000	-1.04	-0.43
	Group 2	-0.06	0.123	0.886	-0.36	0.24
Group 3	Group 1	0.73*	0.124	0.000	0.43	1.04
	Group 2	0.67*	0.124	0.000	0.37	0.98
Group 2	Group 1	0.06	0.124	0.886	-0.24	0.36
	Group 3	-0.67*	0.124	0.000	-0.98	-0.37

Based on observed means.

*The mean difference is significant at the 0.05 level.

Nevertheless, our conclusion for the importance of pre-primary school attendance remains constant.

4.3. Reading and Writing Interplay

In order to examine the general assumption about the interplay between reading and writing performance we correlated writing and reading performance by applying the Pearson Correlation Coefficient Test. Pearson Test showed significant statistical correlation evidence between writing and reading performance and vice versa (Table 10).

TABLE 9
Subset of Scheffe test for alpha (Scheffe^{a,b,c}).

Group	N	Subset	
		1	2
Group 1	66	3.42	
Group 2	66	3.48	
Group 3	64		4.16
Sig.		0.887	1.00

^aUses harmonic mean sample size = 65.320.

^bThe group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

^c $\alpha = 0.05$.

TABLE 10
Pearson correlation coefficient test. (Correlations).

Group	<i>N</i>	First period	Second period
Group 1	66	$r = 0.549; P = 0.000$	$r = 0.708; P = 0.000$
Group 2	66	$r = 0.529; P = 0.000$	$r = 0.630; P = 0.000$
Group 3	64	$r = 0.709; P = 0.000$	$r = 0.836; P = 0.000$

Our findings empirically support the assumption that learning to read and write are strongly interrelated processes. As shown, those children whose writing was classified as more mature also had reading performances that were classified also as more mature. Thus, a strong correlation between the level of writing and the level of reading is observed in both alphabetic and pre-alphabetic levels.

5. DISCUSSION

Our findings strongly support the interdependence of learning to write and read. We could liken these two processes to communicating vessels. Written language as a whole becomes the object under investigation by emergent writers/readers.

The most interesting finding suggests that even though all the children showed significant improvement of writing and reading skills, children who attended pre-primary education for two years (Group 3) had significant advantage. This finding makes obvious the importance of attending a structured learning environment, such as pre-primary educational setting. The effect of schooling seems to be stronger than the effect of age, since, at least in our case, the contribution of pre-school attendance to literacy development could be considered more crucial than that of family literacy.

Pre-primary education enforces emergent literacy by children's engagement in meaningful reading and writing activities. So, the importance of first level of education is to bridge the gap between home and formal schooling by extending and reinforcing home literate practices.

In light of this, we should reconsider the conditions under which early school literacy should be practiced. As we have already mentioned, in Greek pre-primary education teachers restrict early literacy instruction by emphasizing copying words and phonemes-graphemes correspondence. They seem satisfied with pupils' ability to write their names, copy words, know letter sounds and write some simple words. This reflects directing children's attention to the skill-oriented aspects of writing. These

isolated activities take place without taking into account situations in which written language can be fully conceptualized as a co-operative classroom process.

Notwithstanding, children under consideration, especially those who had attended pre-primary education for two years, seemed to gain a lot even within the frame of these traditional programs. Thus, it seems that even more traditional school practices support literacy development. This remark confounds our effort to apply a whole language approach to involve young children to meaningful literacy practices in order to elicit instances of writing and reading performance. Further research must be conducted, especially in Greek pre-primary school setting. For instance, it would be interesting to compare the actual classroom practices with whole language programs through long-term ethnographic observation, to estimate the contribution of each one to early literacy. This kind of research could lead to the development of dynamic literacy programs and strengthen the role of pre-primary education in literacy development.

APPENDIX

Examples of Written Samples and Reading Performances

Example 1: Maria (Group 1, 50 months) First period – message

Writing: scribbling

Reading: Oral monologue “*I have written to come many people with ships so as to save me*”

Example 2: Manolis (Group 1, 52 months) First period – message

Writing: Letter-like strings

Reading: Refusal

Example 3: Panagiotis (Group 2, 61 months) First period – list

Writing: Letter strings

Reading: Labeling “*My toys, a car, a teddy bear, a house, two birds*”

Example 4: Xristos (Group 2, 59 months) First period – message

Writing: some letters of the words

Reading: Oral monologue “*Please, save me*”

Example 5: Dimitra (Group 2, 65 months) First period – message

Writing: Entire phonetic spelling

Reading: Conventional “*Come here to save me, my friend, Kostas*”

Example 6: Themis (Group 2, 62 months) First period – message

Writing: Transitional orthography

Reading: Conventional “*Help I am in the sea and now I am in an isolated island*”

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