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Abstract

The issue of the correlation between infants' language or communicational skills and their social background, is of great interest. The continuous enrichment of children experiences allows them to develop a strong connection between oral and written language. A lot of researches published both in English and in French, have shown off that the level of family literacy is strongly correlated to the development of children language skills. The aim of the research is to investigate the level of phonemic awareness of Greek infants, aged 4-6 years old, growing in different family environments. It is focused on the correlation of the level of the family's literacy (use of P/C, frequency of newspapers and books reading, frequency of buying books – both for children and adults, teaching letter sounds and letters to children) and the infants' scores in tests concerning phonological skills. The results showed off that the level of the family literacy is significantly differentiated to the phonological skills of the children.

Keywords: Family literacy, Phonemic awareness, Family environment, Phonological skills

Introduction

In the last two decades an intense discussion is being held on about the meaning of phonemic / phonological awareness and its contribution to the reading performance and future lingual development of the child and its role also to special cases of dyslexia and reading difficulties (see Hatcher et. al. 1994, Share 1995, Stanovitch 1986). These terms, which have been used to ascribe the same or approximate content, are not unique (see the terms phonological awareness, acoustic awareness, phonetic awareness, auditory analysis, sound categorization, phonemic segmentation, phonological sensitivity and phonemic analysis).

There is not only one definition expressing the phonemic awareness; this term was particularly popular since the beginning of 1990's, while some researchers tried to study the early development of literacy of children and their reading ability (Stahl & Murray 1998, Yopp 1988). By reason of the non-existence of a totally acceptable definition, we consider as useful to cite here some of those who are formulated from time to time, because each one of them focuses and proposes some specific characteristics of it. Phonemic awareness "is typically described as a human concept about the oral speech and especially, about the segmentation of phonemes being used at the lingual communication. It refers to the easiness under which him who learns the language can handle the sounds of the speech'' (International Reading Association 1998). Ball & Blachman (1991) believe that it's the ability of man to recognize that a pronounced word is composed by a sequence of solitary phonemes; Stanovich (1986, 1992, 1993) among his numerous references to the term, regards the phonemic awareness as the ability to handle sound units smaller than syllable and he notes that there's a serious questioning and dissent about the meaning of the term and the nature of the performances which are used for its measurement, suggesting phonological sensitivity is a general term which covers many intermediate levels between surface and profound lingual sensitivity (Stanovich 1986, 1992, 1993); Read (1991), finally, expresses his questioning about the term awareness because it supposes a partition instead of continuity.

The terms phonemic awareness and phonological awareness are used interchangeably and alternatively often as having the same meaning; but more precisely, the first term "phonemic awareness" refers to the conscience ness of the smaller unit of pronounced speech, the phoneme, and the second one includes larger sound units, like syllables or other segments of the word or phrase (Adams 1990, International Reading Association 1998).

The following are stages of phonemic awareness of the child:

- Understanding that sentences are composed by words.

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- Understanding that words can rhyme, can start, finish or content the same phoneme, can be segmented in syllables, in bigger segments or in solitary phonemes.
- Understanding that some phonemes can be omitted to produce new words.
- Ability to combine phonemes to produce words.
- Ability to segment words into phonemes (Adams 1990).

The attainment of phonemic / phonological awareness is not a simple procedure; a little child can not be conscious about the fact that words can be decomposed to distinguish between them segments (phonemes), unless only if he/she has realized that a sentence of oral speech (a continual at the most current of sound without precise pauses) can be segmented in distinct between them, words, that means that the distinction of the segmentation of the sentence is a prerequisite for the recognition of segmentation of the word (Liberman & Liberman 1990). Other researchers assert that the realization that the oral speech is composed by words must not considered as given even for those children who attend school for several years, although they might have been instructed about that even through their pre-school age (Adams 1990, Blachman 1984).

Why so much Interest about Phonemic Awareness – Why it's so Important?

The interest for the phonemic awareness is not new, but it was intensified through last decades by the discovery of some researchers that the awareness about the sounds of the pronounced speech is one of the safest indicators of the development of the future reading ability (Share et al. 1984, Stanovich 1993, MacDonald & Cornwall 1995). The early observations of this kind took place during the 1940's, while some psychologists observed that children who were founding difficulties in reading are those who did not have the ability to distinct the phonemes which compose a word (International Reading Association 1998).

Recent worldwide researches about the acquisition of reading ability have proved that the acquisition of phonemic awareness is a top indicator of the successful learning of reading, especially for the prognosis of the successful learning of decoding, as a resultant of reading. Phonemic awareness abilities which are being developed in the kindergarten or cultivated somehow in children of this age, they seem to be the safest indicator for the prognosis of the successful obtainment of reading ability (Bradley & Bryant 1983, Wagner & Torgesen 1987, Yopp 1995).

Another subject examined by researchers refers to interventions which must be used for the measurement of phonemic awareness of children; in recent years, these implements tend to be concise (see the phonemic awareness measurement test which is suggested by Stanovich 1993, lasting seven minutes), easy to use, reliable and valid (Yopp 1995).

Family Environment and Lingual Literacy

The research, especially, of cohesive structures between social provenance – lingual (communicational) ability – school 'performance' was a basic field for discussion between sociologists and linguists since the 1960's (Bernstein 1958, 1971, Labov 1966, 1970, 1971, 1972a, 1972b).

The research for the influence of the family and specially its social characteristics to the development of the lingual abilities of children has used both qualitative and quantitative research implements (Sulzby & Teale 1991, van Kleeck 1990). The works such these of Teale & Sulzby (1987), Mason & Allen (1986), Scarborough et al. (1991), Hildebrand & Bader (1992) and Snow (1991) have shown the role that the literacy of the family plays to the development of the literacy of the child.

Children growing in low financial and cultural class families face problems to their development and these problems can be easily diagnosed while they enter into the school mechanisms. The sex, the nationality, the financial status of family, the parental education, the language and the interest of parents about the education of their children are some of the factors which influence their lingual development (Fruchter, et. al. 1992, Snow, et. al. 1991). It should be emphasized that several research data assert that the financial status of family does not influence seriously the lingual development of young children (Lareau, 1990, Taylor & Dorsey-Gaines, 1988).

Several research data, however, have shown that the quality of the relevant activities is determinant to the development of the lingual abilities (Hildebrand & Bader, 1992). Researches such these of Durkin (1966) and Heath (1986) showed that the way in which the parents behave to their children at home differs significantly and these differences are reflected on the lingual development level of the children. Teale's research (1986) showed that the participation of children to relevant activities – even if not organized for this reason – was influencing their lingual development on the analogy of the kind of family happenings and the financial and cultural status of the family. Moreover, the researches of Purcell-Gates (1996) and Leseman & de Jong (1998) in family environments of minorities (minor national groups) showed certain differences in the way that these families behave to young children. Finally, it seems to be also very important the influence of the educational characteristics of the family to the development of lingual abilities of the children

under the school age (Heath 1986, Wells 1987, Miller 1996).

We would generally say that the characteristics of literacy a family has, in combination with the attitudes towards both education and learning in general, are influential to the development of literacy of children and their later academic performance. And we should emphasize that in most cases the families, even if they want to, do not have the capability to help their children (Taylor, 1993). How great is the emphasis given to the literacy of family as a factor of the development of the literacy of the children, is shown by the interventions and the projects which have been developed and focused on the literacy of the family. Tao, Gamse & Tarr (1998) note that the U.S.A. Head Start Program supports 637 projects, where 34.000 families are involved. It should be also noted that the successful projects of this kind focus on the literacy of both parents and children.

Methodology of Research

The aim of this research was to examine the nature and the level of the phonologic awareness of children under school age and to relate it with the family literacy environment. The main phase of the research lasted 6 months, from October 2001 until March 2002. The implements used were:

- Interview with every child
- Tasks to examine the phonological abilities of children
- Questionnaire for the parents of the children
- Interview with kindergartens' teachers

The interview with the children was used as a means of acquaintance between researcher and child, of examining their reading preferences and of collecting indirect information about the family literacy level.

The tasks used to examine the phonological abilities of the children are original and were used during the pre-research phase on two groups - classes of children, intending to their amelioration and the selection of the most convenient for the research. Finally, there were formed seven categories-criteria, classified hierarchically according to the level of difficulty, as follows:

1. Syllable segmentation
2. Blending of syllables
3. Rhyme recognition
4. Recognition of common initial phoneme
5. Deletion of initial syllable
6. Addition of initial phoneme
7. Deletion of initial phoneme

The questionnaire addressed to parents was distributed during programmed meetings organized in every kindergarten. It included 21 questions of close and open type: about their educational level; the composition of the family and the birth order of the infant who participated in the research; their reading experiences; the kind of reading opportunities which they provide to their children with, e.g. reading books, narration and re-narration of fairy tales; their attitudes toward books; the literacy environment that they have created within the family. The interview with the kindergartens' teachers was semi-structured and had the target to collect their own estimations for the literacy level of the families of the infants.

During experimental phase eight personal meetings with each infant are required. The first meeting has an acquaintance character and the interview looked like a game. During the other seven meetings they performed the tasks to evaluate the phonological abilities of the infant.

The completion of this phase was followed by the meeting with parents in order to fill the questionnaires. The whole data collecting procedure was completed with the interviews with teachers, to state their own experience and knowledge about the searching subject.

The level of literacy is the resultant between the parents' answers and the checking of answers through their correlation with the answers of teachers and children, answers that were being characterized through a twelve-degree scale.

The formation of the scale was based upon previous analogue researches and deductive data from Greek and international bibliography (Padeliadou, Botsas & Siderides 2000, Weinberger 1996, Wray & Medwell 1993, Heath 1986).

To characterize the literacy level we take into account the following factors: the existence of library and P/C at home, the frequency of purchasing newspapers and books, the category of books, the frequency of purchasing books for the child and the initiatives to teach letters and numbers to children. To find out the actual literacy level we correlated the above mentioned data with other answers from the questionnaire, concerning the hours of watching TV during the day and the titles of books and fairy tales which they red by themselves or narrated by their parents. Moreover, we made a crossing of validity between the interviews with children and the notes of the teachers.

Results

In the research took part 79 children under school age, 30 infants (16 boys and 14 girls) and 49 pre-infants (28 boys and 21 girls).

Interview

During the interview the majority of children (95%) said that they like fairy tales very much. The children' answers proved as favorite the classic and popular fairy tales as much as the contemporary. The most famous fairy tale under the classic category was proved, according to the answers of the

children, the classical fairy tale "The three little pigs" (50%), while "The three little wolves" written by E. Trivizas (Greek contemporary storyteller) was the most preferred between children (44%) among the contemporary fairy tales. There were several children (17.7%) who chose as favorite fairy tale a title of a TV serial or motion pictures film.

The majority of children also (95%) said that they like to read books. Some of their favorite books said that they are "The Snow White and the seven Dwarfs", "The three little pigs", "The Little Red Riding Hood" and "The seven little goats". Most of the children did not know the name of the author of their favorite book, while some of them did not answer at all to this question. None of the responses of children who answered corresponds to reality, but several of them are 'original'. Three children mentioned the teacher as the author, one of them referred to Hans Christian Andersen, and two of them answered that the book was written "by the author". Eugene Trivizas is mentioned twice, the first one referred as the author of the Bible. One very characteristic answer of a child: "The book was done by me together with my mom. My mom made the letters and I made the pictures".

When children were asked to sing a song, 43% chose an infant' song while the 14% answered that they cannot sing or do not know any song. Three children created an improvised song and three others chose to sing a contemporary popular hit, one of which was in English.

Several children (35%) said in the interview that they can not say a poem or they do not remember one. Characteristic is the answer of a child: 'what is a poem, I do not know'. Many children, though, gave direct responses. The majority of them chose a school poem, while there were also many who recited a patriotic poem, most probably being influenced by the Greek national holiday of 28th of October, because in two schools the interview was held during that period. Among the songs as much as among the poems, the most popular proved to be 'my luminous little moon' and 'I climbed on the pepper plant'. Several children when were asked to sing a song, they say a poem, and the reverse. In the question if they know a poem which starts like 'my luminous little moon' the majority of children (86,1%) answered in the affirmative, while the 'our good cow' was known only by the 26,6% of children.

Family Profile

Most children (64.6%) come from four-member families and half of them are older in birth order. The average age of children' fathers are 36 years and of mothers is 32 years. Most fathers work as businessmen (41.1%) or employees (38%), while in minor percentages there are farmers (7.6%) or workers (6.3%). Most mothers (43%) are housewives; several of them work as employees (25.3%), businesswomen (19%), or workers (12.7%). To their majority fathers (64.6%) and mothers (63.3%) are graduates of high school. Almost one to four fathers is post-graduated, while the corresponding percentage concerning mothers runs to 31.6%.

The literacy level of most families (65.8%) found to be low to very low. An average literacy level was found at the 19% of families, while a high one at the 15.2%.

Tests for the Detection of Phonologic Abilities

For the data elaboration and the registration of phonological skills of infants, there had been used the performances that the children showed to each one of the seven tasks. To examine possible differentiation on the phonological abilities of children according to their class (infants, pre-infants), there had been used the t-test technique, with dependent variables the performance to each test and independent variable the class. To all tests a statistically significant differentiation was noticed to the performances of children in analogy with the class. More precisely, the infants showed better performances in relation to the pre-infants (Table 1), and for this reason the presentation of the results of those tests is given separately for each class, as below.

Table 1

Average Performances and Typical Deviations on the Seven Tests Per Class.

Criteria	Pre- Infants		Infants	
	Average performance	Standard deviation	Average performance	Standard deviation
Syllable segmentation	8.42**	2.03	9.37**	0.93
Blending of syllables	7.73*	2.48	9.37*	0.72
Rhyme recognition	7.29**	1.90	8.40**	1.54
Deletion of initial syllable	8.23*	2.35	9.83*	0.75
Recognition of common initial phoneme	6.92*	2.01	8.57*	1.79
Addition of initial phoneme	4.88*	3.06	7.17*	2.36
Deletion of initial phoneme	7.33*	2.38	6.57*	2.46

* Statistically significant difference at 0.001 level

** Statistically significant difference at 0.01 level

Pre-Infants

To examine the possible differentiation on the performances of pre-infants on the content of the exercises according to their gender and whether they have elder brothers/sisters or not, the t-test technique has been used with dependent variable the performance of children to each of seven tests and independent variables the above factors. Analysis revealed that the performances of either boys or girls are the same to all tasks except to syllable segmentation, where the girls are found to show better performance than the boys ($t = 2.12$, $df = 46$, $p<0.05$). The birth order of the child does not seem to influence his/her performance to the tests, except to the test of rhyme recognition, where the pre-infants who have elder brothers/sisters show better performance ($t = 3.19$, $df = 42$, $p<0.005$) from those who don't.

To examine possible differentiation on the performances of pre-infants in the content of the exercises according to the educational level and the profession of their parents, the 2-way ANOVA technique was applied, which revealed that there is no influence of those two factors on the performances of pre-infants, or interaction between them.

To examine possible differentiation on the performances of pre-infants in the content of the exercises according to the literacy level of the family, the technique of one-way ANOVA was applied, with dependent variable the performance of pre-infants to the tests and the literacy level of the family as the factor. Analysis revealed that the performances of pre-infants to all tests are proportional to the literacy level of the family. More precisely, statistically significant difference was noticed to the tasks of blending of syllables ($F3,44=2.85$, $p<0.05$), where the best performances were given by the children from average to high level of literacy, of the rhyme recognition ($F3,44=3.07$, $p<0.05$), where the performances were proportional to the literacy level, of the addition of initial phoneme ($F3,44=5.26$, $p<0.005$), where the performance was very low by the pre-infants who come from very low literacy level families, in contrast with the pre-infants who come from average or high level families, and finally, of the effacement of initial phoneme ($F3,44=3.81$, $p<0.05$), where the performances were proportional to the literacy level.

Infants

To examine possible differentiation on the performances of the infants to the content of the exercises according to their gender and whether they have elder brothers/sisters or no, the t-test technique was applied, with depended variable the performance to each task and independent variables the above factors, where the result was that the boys had the same performances with the girls. On the contrary, the infants who had elder brothers/sisters showed better performance to the tests of blending of syllables ($t = 2.54$, $df = 27$, $p<0.05$) and of effacement of initial phoneme ($t = 2.21$, $df = 27$, $p<0.05$), than the infants who do not have elder brothers/sisters, while they performed equally to all the rest tests.

To examine possible differentiation on the performances of infants to the content of the exercises according to the educational level and the profession of their parents, the 2-way ANOVA technique was applied, from which resulted that there is no influence of those two factors on the performances of the infants, or interaction between them.

To examine possible differentiation on the performance of the infants to the content of the tests, according to the literacy level of the family, the technique of one-way ANOVA was applied, from which resulted that the literacy level influences their performance to some tasks. More specifically, the

literacy level of the family seems to influence the performances of the infants to the tasks of addition ($F_{3,26}=9.77$, $p<0.001$) and of deletion of initial phoneme ($F_{3,26}=5.82$, $p<0.005$), where the performance of infants was proportional to the literacy level of the family.

Final Remarks

As table 2 shows, the performances of pre-infants were, in general terms, analogue to the level of difficulty of each test. An exception was noticed on the task of deletion of initial syllable, where, while it thought to be more difficult than the blending of syllables and the rhyme recognition (Adams 1990, Papoulia-Tzelepi 1997), the pre-infants succeeded better performance. Drawing in parallel, better than expected performance was noticed also on the task of deletion of initial phoneme, where, while it thought to be more difficult from the rest, the pre-infants showed a sufficiently high performance, even higher than that of the infants'.

The birth order of the child seems to influence the performance only on the task of rhyme recognition, where the pre-infants who had elder brothers/sisters show better performance than those who don't have, by reason, probably, of hearing too early the elder children to recite poems or songs which rhyme, within their family environment.

The performances of the infants to the seven tests were proportional to their level of difficulty, with the unique exception of the task of deletion of initial syllable, where the infants showed the best performance (table 2), a conclusion to which other researchers also have come to, asserting that the first part of the word is easier perceivable than the last part (Papoulia-Tzelepi 1997). Generally, however, there was ascertained the opinion that the infants usually show better performances than the pre-infants (Papoulia-Tzelepi 1997).

There was also proved the ascertainment of other researches that there is not statistically significant difference between the performances of boys and girls (Papoulia-Tzelepi 1997).

In the sample there seemed to be no influence of the education of parents and their professional activity on their children' performance to the phonological awareness exercises, though generally, its co-relation with the social-financial status of parents has been proved, but especially with the mother's educational level (Durkin 1966, Heath 1986, Wells 1985a, Snow et. al. 1991, Papoulia-Tzelepi 1997, Panteliadou, Botsas & Siderides 2000).

Finally, a direct connection was ascertained between the level of literacy of the family and the performances of the children, a fact that many researches have discovered, both on international (Mattingly 1984, Raz & Bryant 1990) and national level (Papoulia-Tzelepi 1997, Padeliadou, Botsas & Siderides 2000).

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