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Reading Skills and Strategies: Assessing Primary School Students' Awareness in L1 and EFL Strategy Use

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Abstract

The present study was designed and conducted with the purpose to assess primary school students' awareness in GL1 (Greek as first language) and EFL (English as a foreign language) strategy use and investigate the relations between the reported reading strategies use in first (L1) and foreign language (FL). The sample (455 students attending the fifth and sixth grades of primary schools in Northern Greece) was first categorized into skilled and less skilled L1 and EFL readers through screening reading comprehension tests, one in L1 and one in FL, before filling in the reading strategy questionnaires. The findings revealed participants' preference for "problem solving" strategies, while "global strategies" coming next. Girls were proved to be more aware of their reading strategies use with the boys reporting a more frequent use in both languages. Also, skilled readers were found to use reading strategies more effectively, and appeared to be more flexible in transferring strategies from L1 to FL compared to less-skilled readers.

Keywords: reading awareness, reading strategies, reading difficulties, primary school students

1. Introduction

Reading, in either L1 (first language) or L2/FL (second/foreign language), is a complex, thinking, problem solving, and communication process between the reader and the author (Brantmeier 2005; Grabe & Stoller 2001). Through the active reader-text interaction, the reader obtains a comprehension product by activating a set of cognitive and metacognitive processes (Meneghetti, Carretti & De Beni 2006). Thus, reading comprehension requires the usage of prior knowledge, the association of readers' own knowledge with the messages expressed in the text, the ongoing monitoring and regulation of comprehension according to the goals of reading, accomplished by the use of appropriate and effective strategies (Alexander & Jetton 2000).

Reading strategies, which have been defined as (a) techniques, behaviors, or problem-solving skills that make reading more effective and efficient (Green & Oxford 1995), (b) cognitive tools and tactics that can be used selectively and flexibly by the reader to engage and comprehend information (Paris, Wasik & Turner 1996) or (c) goal-oriented attempts to control and modify the reader's efforts to decode and comprehend a text (Afflerbach, Pearson & Paris 2008), are indicators of how readers make sense of incoming information and how they react when they cannot construct the meaning of a text.

Moreover, students' strategies activation can be a useful means of increasing reading comprehension and assisting readers manage, direct and guide their reading process, as well as a means of making readers more responsive to comprehension difficulties (Pressley 2002). The studies on reading strategies reveal various classifications, which can be broadly grouped into two taxonomies, 'top-down' or 'bottom-up' strategies. 'Top down' strategies are the strategies that readers use to preview the text content, construct a goal for reading, note text characteristics, guide and monitor the reading process, and make inferences, comment on text order, make associations with information, make evaluative comments — that is, 'metacognitive' or 'global' strategies (Sheorey & Mokhtari 2001). 'Bottom up' strategies, on the other hand, are those employed by readers to understand specific linguistic units, include a number of 'cognitive', 'local' strategies (e.g., focus on individual words) (Block 1992) or 'support' strategies (using a dictionary, taking notes, highlighting textual information, or translating) (Sheorey & Mokhtari 2001).

However, L1 comprehension is facilitated through a more frequent use of reading strategies compared to a less frequent use of L2 strategies employed by students reading texts in L2, since, according to Maarof and Yaacob (2011), students are more familiar with the L1 reading strrategy use. The following variables were suggested to make reading

comprehension process of L2/FL different from L1 process: (a) the influence of prior literacy and L1 reading experience, (b) constraints imposed by limited linguistic knowledge, (c) the cross-linguistic interactions, (d) transfer of L1 reading skills and strategies, (e) facilitation from L1-L2/FL structural similarity (Enright, Grabe, Koda, Mosenthal, Mulcahy-Ernt & Schedl 2000).

A bulk of studies have indicated that students' L1 reading ability and skills, strategies use and L2/FL language proficiency contribute to effective L2 reading (Carrell 1991; Bossers 1992). A strong relationship between L1 and L2 reading strategies has also been revealed (Sarig 1987), since it has been claimed that cognitive and metacognitive skills are transferable from L1 reading to other reading contexts (e.g., Palinscar & Brown 1984; Tang 1997). It has also been found that the more proficient students in L2 showed more transfer of strategy use from the L1 reading to L2/FL reading context (Kong 2006). On the contrary, limited L2 skills 'prohibit' transferring of 'top-down' strategies from L1 to L2 reading context and confine the reader to employ 'bottom-up' strategies (Davis & Bistodeau 1993). These research findings supported either the linguistic 'threshold hypothesis', stating that effective L1 readers show competent L2/FL reading skills once they have passed a threshold of L2/FL ability (Alderson 1984) or the linguistic 'interdependence hypothesis' admitting that once a student has a high level of L1 development, a similar level of competence is possible in L2/FL, as well as higher L2/FL development could support L1 development (Cummins 1991).

There has been consensus among researchers that reading skills and strategies use are related to language proficiency and gender. Studies have indicated that less proficient students are deficient in multiple reading processes and less flexible in cognitive and metacognitive strategy employment. Specifically, besides reporting higher levels of 'global strategies' use, effective L2/FL learners also showed flexibility in using various strategy categories and greater awareness of processing strategies to monitor their reading (O'Malley & Chamot 1990; Nyikos & Oxford 1993). Contrastively, less successful readers use local strategies (Huang, Chern & Lin 2009), are not aware of identifying reading problems (Shen 2003), and do not know how to 'orchestrate' a variety of strategies for effective comprehension purposes (Griva, Alevriadou & Geladari 2009; Griva, Alevriadou & Semoglou 2012). Moreover, gender differences in the frequency and flexibility of strategy use have been indicated in a number of studies. Female students were revealed to employ a wider range of reading strategies in coming to terms with the text and monitoring the comprehension of the text messages (Griva et al. 2012; Pressley & Afflerbach 1995; Singhal 2001). However, girls seemed to employ more frequently a variety of cognitive, metacognitive and social strategies than boys in middle school, but not in high school and college (Lee 2011).

Investigating students' reading skills and strategic awareness could contribute to the improvement of reading instruction and the design of alternative models of strategies training, which aim at developing motivated readers to keep reading any material either in their L1 or L2/FL, as well as skilled readers who are able to monitor their reading process (Brantmeier 2005).

1.1 The current study

Most of the studies on reading strategies employed by young learners have focused on either of the two languages, L1 or L2, without attempting to investigate the possible relation between L1 and L2 reading. In relation to similar studies conducted with adults, no consensus was indicated among the researchers regarding the comparison of frequency of L1 and L2 reading strategies use. Thus, it has been found that the frequency of reading strategies use was higher in L2 than in L1 (Kong 2006; Alsheikh & Mokhtari 2011); however in some other studies the opposite results were revealed (Tsai, Ernst & Talley 2010; Maarof & Yaacob 2011) or no significant difference between L1 and L2/FL reading strategies was indicated (Anderson 1991).

Therefore, this study, with the purpose to fill the research gap on the one hand and clarify the ambiguity on previous studies on the other hand, aimed at examining the perceived reading strategies in GL1 (Greek as first language) and EFL (English as a foreign language) employed by primary school students. Our hypothesis was that pupils' reading strategies use will differ not only in each of the two languages (GL1 and EFL) but also among them because of gender influence and the differentiations in GL1 and EFL reading abilities.

The following research questions were posed to the current study:

1. What are students' reading strategies use in GL1 and EFL overall and for each of the three reading strategy categories?
2. What is students' metacognitive awareness of each individual reading strategies use in GL1 and EFL?
3. Are there significant differences by gender with respect to any of the three reading strategy categories or to individual reading strategies use in GL1 and EFL?
4. Are there significant differences by skilled and less skilled EFL readers with respect to any of the three reading strategy categories or to individual reading strategies use in GL1 and EFL?
5. Are there significant differences between reading strategies used in GL1 and EFL by students of the same EFL reading ability?

2. Method

2.1 Participants

The sample of the present study consisted of 455 primary school students (aged 11 to 12), 217 boys and 238 girls, who attended the fifth (N=215) and sixth grade (N=240) in five state schools in Thessaloniki, northern Greece. All subjects had studied English for at least 3 to 4 years, since in Greece, English as a foreign language is part of the curriculum of state primary schools (it is taught from the third grade and in some schools from the first primary school grade). For the purpose of this study, the sample was divided into two groups of skilled (258) and less-skilled readers (197).

2.2 Instruments

Two reading comprehension tests were administered to the participants, a Greek (L1) and an English one (FL), each followed by a questionnaire, researching their awareness of reading strategies used in each language. Before the comprehension test, the participants were asked to fill in a form of demographic information and a self-report list of reading difficulties awareness.

2.2.1 GL1 reading comprehension test

A standardized reading comprehension test, well known in Greece as test -A (Panteliadou & Antoniou 2007), was used in order to measure students' reading ability in L1. It estimates L1 reading difficulties from 3rd to 9th graders and includes two parts. The first part consists of four groups of five syntactically different but somewhat similar sentences each. Students had to find those two sentences in each group that match semantically. In the second part, there were three reading passages (one narrative and two expository) ranging from 97 to 127 words and followed by 7 multiple-choice items each. This instrument scored one point for each of the 25 items in total. Pearson correlation coefficient that ensures test-retest reliability for this measure is 0.809 ($\rho < 0.001$) and Cronbach's alpha is placed at 0.81.

2.2.2 EFL reading comprehension test

K.P.G., the state certificate of language proficiency A1 – A2 levels (Common European Framework) was used to measure students' L2 reading comprehension. Three authentic passages were chosen from the corresponding parts of the exam papers in a way that the topics were familiar to the pupils such as: 'Kids! Car safety first!'(84 words), 'Youtube…An incredible success story'(180 words) and 'Stunt performers. The real super heroes'(228 words). All passages were followed by multiple-choice items and the maximum score here was 15, one point for each correct answer.

2.2.3 Self-report list of reading difficulties

A self-report list of reading difficulties, including seven statements was administered along with the main language comprehension tasks and the corresponding reading strategy questionnaires. Students were asked to self-rate their awareness of reading difficulties in each of the two languages. The list used a 3-point Likert scale where the lesser the mean score was, the more reading difficulties were assumed to be confronted by the subjects (1= almost never, 2 = sometimes and 3= almost always). The list included the following statements common for GL1 and EFL:

a) I can read a text fluently.
b) I can read a text with the correct pronunciation.
c) I can easily skim for the gist of a text.
d) I can read a text rapid enough.
e) I can understand unknown words from the context.
f) I can understand the main points of a text.
g) I can easily scan for the basic facts in a text.

2.2.4 GL1 reading strategies questionnaire

The instrument used in the present study to identify and record reading strategies was the metacognitive awareness of reading strategies inventory (MARSI), which was developed by Mokhtari and Reichard (2002) as a tool for measuring native students' awareness of reading strategies use while reading school-related or academic material from fifth grade to college. It consists of 30 items grouped in three subscales: global strategies (13 items), problem-solving strategies (8 items), and support strategies (9 items). For the purpose of this study, it was carefully translated into Greek making all the necessary modifications so that it could be easily understood. The originally used 5 point-Likert scale was altered to a 3-point (1 = almost never, 2 = sometimes, 3 = almost always) thus, minimizing possible confusion on the part of the learners as well as reducing the time of completion. The higher the number is, the more frequent the perceived use of the strategy becomes. In addition, an icon was inserted (sad, blank, smiling) for each of the three choices respectively to further assist participants' spontaneous marking. Cronbach's alpha for each of the three subscales is reported by the researchers to be 0.92 for global, 0.79 for problem-solving and 0.87 for support strategies. The reliability for the overall scale is 0.89 whereas for the sixth grade separately is 0.91 (Mokhtari & Reichard 2002: 253). For the adapted in Greek scale, Cronbach's alpha was overall 0.83 and for the three subscales: global (0.72), problem-solving (0.55) and support strategies (0.65).

2.2.5 EFL reading strategies questionnaire

An overlapping to the previous MARSI, the survey of reading strategies (SORS) was the instrument used in order to determine Greek-speaking participants' metacognitive awareness of FL reading strategies. It was developed by Sheorey and Mokhtari (2001) as an adaptation of MARSI enabling it to be administered to non-native speakers of English. The basic modification made was the substitution of two redundant support strategies (i.e., 'summarizing text information' and 'discussing reading with others') with two others that are more suitable for EFL learners (i.e., 'when reading, I translate from English into my native language' and 'when reading, I think about information in both English and my mother tongue'). The instrument embodies the same subscales with the previous one. In the current study, Pearson correlation coefficient for test-retest reliability of SORS was 0.623 ($\rho = 0.004 < 0.01$) for the whole scale and for its subscales: global strategies 0.471 ($\rho = 0.042 < 0.05$), problem-solving 0.703 ($\rho = 0.001 < 0.01$) and support strategies 0.623 ($\rho = 0.004 < 0.01$). Cronbach's alpha for the adapted in Greek scale was 0.86 for the whole scale and for the three subscales: global (0.76), problem-solving (0.69) and support strategies (0.69).

2.3 Procedure

The two sets of tests were administered in regular classrooms, each set lasting for one class period, held in two sessions the one being two weeks after the other. In the first session, the GL1 reading comprehension test was conducted. As soon as the students had finished the test, they were asked to answer the GL1 reading strategy questionnaire. In the second session, the same procedure was followed for EFL set of tests. The researchers created a friendly atmosphere, so that the students should have no anxiety sitting for the reading comprehension tests and leaving no question unanswered.

3. Results

3.1 Reading comprehension tests

Based on the final readers' raw scores in the EFL reading comprehension test (mean = 8.67, SD = 3.77, median = 9.0), the participants were divided into two groups of skilled and less-skilled readers.

Table 1. Means and standard deviations of the tests in skilled and less-skilled EFL Readers

		EFL comprehension test (max. score = 15)		GL1 comprehension test (max. score = 25)	
	N	Mean	SD	Mean	SD
Skilled	258	11.39	1.81	20.61	2.41
Less-skilled	197	5.12	2.50	12.32	3.55
Total	455	8.67	3.77	18.86	4.32
t (df)		29.666 (342.47)*		21.541(119.446)*	

Significance: *= $p < 0.001$

Those who performed above 60% were classified as skilled readers (N=258, 56.7%) and those who performed below (N=197, 43.3%) were the less-skilled readers. The results of t-tests showed significant differences in the mean scores between the two groups for the EFL reading comprehension test as well as for the GL1 one (see Table 1). The correlation between GL1 and EFL reading scores was found to be statistically significant ($r = 0.331$, $\rho = 0.000$). Independent samples t-test showed significant differences in the mean scores between genders (see Table 2). Girls showed better reading performance than boys in comprehension tests both in GL1 and EFL.

Table 2. Means and standard deviations of the tests in gender

		EFL comprehension test (max. score = 15)		GL1 comprehension test (max. score = 25)	
	N	Mean	SD	Mean	SD
Boys	217	7.99	3.98	18	4.78
Girls	238	9.30	3.47	19.65	3.70
t (df)		-3.765 (453)*		-4.099(406.5)*	

Significance: *= $p < 0.001$

3.2 Reading difficulties awareness

Concerning students' awareness in reading difficulties, as reported in the list administered to them along with the main language comprehension tasks, descriptive statistical analysis for the whole sample indicated that students reported more reading difficulties in EFL (M =2.29, SD =0.47) than in GL1 (M =2.46, SD =0.32).

Differences in reading difficulties awareness between girls and boys were tested using non parametric Mann-Whitney tests. Statistically significant difference was found between the mean scores only in EFL ($Z = -3.331$, $\rho = 0.001$) (see Table 3).

Table 3. Means and standard deviations of reading difficulties awareness in GL1 and EFL reported by gender

Difficulties awareness	boys (N =217)		girls (N =238)		Z	ρ
	Mean	SD	Mean	SD		
EFL	2.22	0.49	2.36	0.43	-3.331	0.001
GL1	2.45	0.31	2.48	0.32	-1.511	0.131

Specifically, girls showed to have a mean easiness when reading in the foreign language 2.36 (SD=0.43), whereas boys' mean score was 2.22 (SD =0.49). On the contrary, no significant difference was found in the perceived reading difficulties in GL1 between girls and boys (Z = - 1.511, ρ =0.131). The mean scores were 2.45 (SD =0.31) and 2.48 (SD=0.32) for boys and girls, respectively. In other words, boys were aware of having more reading difficulties than girls in EFL, whereas in GL1 both boys and girls showed the same reading difficulties awareness.

Non parametric Mann-Whitney test was also computed to compare the mean scores in GL1 and EFL reading difficulties awareness between skilled and less-skilled EFL readers of this study (see Table 4). Between groups significant differences were found in both EFL (Z = - 9.782, ρ =0.000) and GL1 (Z= - 4.531, ρ=0.000). Skilled readers showed a mean awareness of GL1 reading easiness (M=2.52, SD=0.28) the highest among all means computed here, whereas less-skilled readers indicated a lower mean score (M=2.38, SD=0.34). In EFL, less-skilled readers perceived to have much more reading difficulties (M=2.05, SD=0.48) than skilled readers (M=2.48, SD=0.36).

Table 4. Means and standard deviations of reading difficulties awareness in GL1 and EFL reported by skilled and less-skilled L2 readers

Difficulties awareness	Skilled (N =258)		Less-skilled (N =197)		Z	ρ
	Mean	SD	Mean	SD		
EFL	2.48	0.36	2.05	0.48	-9.782	0.000
GL1	2.52	0.28	2.38	0.34	-4.531	0.000

3.3 Reading strategies in GL1 and EFL

Regarding the first research question, Table 5 shows the results obtained. All the means indicated a more frequent reading strategies use in GL1 than in EFL for the overall as well as for each of the strategies categories.

Table 5. Means, standard deviations and results of paired sample t- test indicating GL1 and EFL reading strategies use by the participants (overall and on each of the strategy categories)

Reading strategy category (most to least used)	N	GL1		EFL		
		Mean	SD	Mean	SD	t
Problem-solving	455	2.47	0.31	2.41	0.38	3.364*
Global	455	2.26	0.33	2.23	0.36	1.647
Support	455	2.08	0.38	2.03	0.40	2.933*
Overall reading strategies	455	2.26	0.28	2.22	0.32	3.186*

Significance: *= p< 0.01

The overall means of GL1 and EFL reading strategies use was 2.26 (SD =0.28) and 2.22 (SD=0.32), respectively. In both GL1 and EFL the order of reading strategy category preferred by students was the same. Students showed a clear preference for problem-solving strategies which were the most frequently employed with high means of 2.47 (SD= 0.31) for GL1 and 2.41 (SD= 0.38) for EFL, followed by global strategies which also presented the high means of 2.26 (SD= 0.33) for GL1 and 2.23 (SD=0.36) for EFL. The means of support strategies use indicated less frequent use. For GL1 and EFL, they were 2.08 (SD =0.38) and 2.03 (SD= 0.40), respectively. Paired-sample t-test revealed significant differences both for the overall reading strategies used and for all the categories apart from global reading strategy category.

3.4 Metacognitive awareness of strategy use in GL1 and EFL

Individual reading strategies means and standard deviations reported in the following three tables (see Table 6, 7 and 8) indicate that the participants have awareness of all reading strategies in all three subscales or categories when reading in both languages. The items in all three tables were set in a diminishing order of EFL means.

3.4.1 Metacognitive awareness of problem–solving strategies in GL1 and EFL

Regarding problem-solving strategies, GL1 means range from a high of 2.73 to a low of 2.04. Similarly, EFL means range from 2.67 to 2.01 indicating that the participants were almost always aware of their use while reading school-related texts (Table 6). 'Concentration' while reading (no.9) and 'closer attention' when confronted with text difficulty (no.14) top this category list with very high means of 2.73 (SD = 0.51), 2.74 (SD= 0.48) in GL1 and 2.67 (SD= 0.56), 2.61 (SD= 0.61) in EFL. The observed higher scoring in L1 comparing to that in EFL is reversed for strategies no. 11 and no. 28. 'Adjusting reading speed' was a more frequently used strategy in EFL (M= 2.37, SD = 0.73) than in GL1 (M=2.34, SD =0.72). Similarly, 'guessing meaning of unknown words' showed a mean of 2.33 (SD= 0.74) in EFL compared with a 2.30 (SD= 0.69) in GL1.

Table 6. Students' metacognitive awareness of problem–solving strategies in GL1 and EFL

Problem-solving strategies	EFL		GL1	
	Mean	SD	Mean	SD
(9) I try to get back on track when I lose concentration.	2.67	0.56	2.73	0.51
(14) When text becomes difficult, I pay closer attention to what I am reading.	2.61	0.61	2.74	0.48
(25) When text becomes difficult, I re-read it to increase my understanding.	2.54	0.65	2.66	0.58
(7) I read slowly and carefully to make sure I understand what I am reading.	2.45	0.66	2.58	0.61
(11) I adjust my reading speed according to what I am reading.	2.37	0.73	2.34	0.72
(19) I try to picture or visualize information to help remember what I read.	2.33	0.76	2.36	0.75
(28) When I read, I guess the meaning of unknown words or phrases.	2.33	0.74	2.30	0.69
(16) I stop from time to time and think about what I am reading.	2.01	0.76	2.04	0.75

3.4.2 Metacognitive awareness of global strategies in GL1 and EFL

As Table 7 indicates, eleven out of the thirteen global strategies reported high mean values above 2.00 in both GL1 and EFL. All strategies were also more frequently used in GL1 than in EFL except for strategies no.3, no. 15 and no. 8 where the mean values were significantly higher in EFL than in GL1. Use of background knowledge (M = 2.56, SD= 0.63) as well as of text features (M = 2.41, SD= 0.70) for better understanding seemed to be more essential strategies in EFL than in GL1. In first five overall reading strategies use, global strategies no.1 and no.3 appear for GL1 and for EFL, respectively.

Table 7. Students' metacognitive awareness of global strategies in GL1 and EFL

Global strategies	EFL		GL1	
	Mean	SD	Mean	SD
(3) I think about what I know to help me understand what I read.	2.56	0.63	2.39	0.62
(15) I use tables, figures, and pictures in the text to increase my understanding.	2.41	0.70	2.29	0.72
(17) I use context clues to help me better understand what I am reading.	2.40	0.64	2.41	0.60
(6) I think about whether the content of the text fits my reading purpose.	2.38	0.71	2.50	0.61
(1) I have a purpose in mind when I read.	2.37	0.66	2.52	0.60
(23) I check my understanding when I come across new information.	2.31	0.69	2.44	0.64
(8) I review the text first by noting its characteristics like length and organization.	2.30	0.76	2.25	0.74
(4) I take an overall view of the text to see what it is about before reading it.	2.26	0.74	2.30	0.73
(20) I use typographical features like bold face and italics to identify key information.	2.21	0.74	2.23	0.71
(21) I critically analyze and evaluate the information presented in the text.	2.05	0.74	2.10	0.73
(12) When reading, I decide what to read closely and what to ignore.	2.00	0.69	2.09	0.72
(24) I try to guess what the content of the text is about when I read.	1.93	0.77	1.96	0.77
(27) I check to see if my guesses about the text are right or wrong	1.86	0.78	1.90	0.78

3.4.3 Metacognitive awareness of support strategies in GL1 and EFL

Because of the different reading strategy used, support strategies no. 29 and no.30 were different for GL1 and EFL thus, not comparable (Table 8). The rest of the strategies in this category showed lower mean values in EFL than in GL1 except for no.13 'using reference material (dictionary)', which exhibited a higher mean 1.99 (SD= 076) in EFL compared to the 1.88 (SD= 0.75) in GL1. The least frequently used in both EFL (M= 1.67, SD =0.74) and GL1 (M= 1.76, SD= 0.74) was no. 2 support reading strategy.

Table 8. Students' metacognitive awareness of support strategies in GL1 and EFL

Support strategies	EFL		GL1	
	Mean	SD	Mean	SD
(30 EFL) When reading, I think about information in both English and Greek.	2.33	0.72		
(29 EFL) When reading, I translate from English into Greek.	2.30	0.76		
(18) I paraphrase (restate ideas in my own words) to better understand what I read.	2.20	0.77	2.25	0.74
(5) When text becomes difficult, I read aloud to help me understand what I read.	2.04	0.77	2.25	0.79
(13) I use reference materials (e.g. a dictionary) to help me understand what I read.	1.99	0.76	1.88	0.75
(22) I go back and forth in the text to find relationships among ideas in it.	1.94	0.78	1.99	0.75
(10) I underline or circle information in the text to help me remember it.	1.87	0.78	2.10	0.76
(26) I ask myself questions I like to have answered in the text.	1.81	0.74	1.91	0.78
(2) I take notes while reading to help me understand what I read.	1.67	0.74	1.76	0.74
(29 GL1) I write summaries to reflect on key ideas in the text.			2.31	0.71
(30GL1) I discuss my reading with others to check my understanding.			2.05	0.77

3.5 Gender differences in GL1 and EFL reading strategies use

As far as gender is concerned, independent samples t-tests were conducted for GL1 and EFL in order to investigate possible significant differences related both to the mean use of the three strategy categories and each of the particular reading strategy items.

3.5.1 Differences related to GL1 reading strategies use

In GL1 reading strategies use, boys appeared to surpass girls only in the use of global strategies showing a mean value of 2.27 (SD= 0.33) compared to girls' 2.25 (SD= 0.34) however not significantly (t= 0.335 df = 453 p = 0.738 > 0.05). In the overall GL1 reading strategy use, girls exhibited slightly higher mean values (M= 2.27, SD= 0.29) than boys (M= 2.25, SD=0.28), (t= -1.031 df = 453 p = 0.303 > 0.05). However, girls outperformed boys significantly only in the mean frequency of problem-solving strategies use with mean values 2.50 (SD=0.31) and 2.44 (SD=0.32), respectively (t= -2.181 df = 453 p = 0.030 < 0.05). In support strategies the mean scores were 2.10 (SD=0.40) and 2.05 (SD= 0.37) for girls and boys, respectively not a significant difference either (t= -1.392 df = 453 p = 0.165 > 0.05).

3.5.2 Differences related to EFL reading strategies use

It was found that in the overall EFL reading strategies used, girls surpassed (M=2.25, SD=0.33) boys (M=2.19, SD=0.32) but not significantly (t= - 1.740 df = 453 p = 0.083 > 0.05). Girls also exceeded boys in all three reading strategy categories but statistically significant differentiation was found only in problem-solving strategies (t= - 3.246 df = 453 p = 0.001 < 0.05) with mean scores 2.47 (SD = 0.38) and 2.35 (SD =0.39) for girls and boys, respectively. More specifically, the mean use of global strategies for girls was 2.24 (SD =0.37) and for boys 2.22 (SD = 0.35) with the t value – 0.508 df = 453 p = 0.612 > 0.05 and in support strategies category the mean values were 2.05 (SD = 0.41) and 2.00 (SD = 0.39) for girls and boys, respectively (t= - 1.260 df = 453 p = 0.208 > 0.05).

Table 9. Independent samples t-test significant results for EFL strategy items as the dependent variables and gender as the independent variable

EFL reading strategies	boys (N = 217)		girls (N= 238)		ρ
	Mean	SD	Mean	SD	
(GLO)I critically analyze and evaluate the information presented in the text.	2,16	0,72	1,95	0,74	0,003**
(PRO)I try to get back on track when I lose concentration.	2,60	0,62	2,74	0,48	0,011*
(PRO)When text becomes difficult, I pay closer attention to what I am reading.	2,53	0,64	2,69	0,57	0,008**
(PRO)When text becomes difficult, I re-read it to increase my understanding	2,43	0,70	2,63	0,58	0,001**
(PRO)When I read, I guess the meaning of unknown words or phrases.	2,23	0,76	2,42	0,71	0,008**
(SUP)I underline or circle information in the text to help me remember it.	1,79	0,77	1,94	0,78	0,048*
(SUP)I ask myself questions I like to have answered in the text.	1,74	0,74	1,88	0,74	0,047*

Significance: *= p< 0.05, **= p< 0.01

Table 9 presents the independent samples t-test results with means and standard deviations for 7 EFL reading strategy items (23% of the whole reading strategies), which revealed significant statistical differences as far as gender is concerned. In problem-solving strategies which had the higher representation (4 out of 8, 50%) as well as in support strategies (2 out of 9, 22%), boys showed a lower strategy mean score than girls.

3.6 Skilled versus less-skilled readers in GL1 and EFL reading strategies use

Independent samples t-tests were conducted for GL1 and EFL showing mean scores and standard deviations of skilled and less-skilled readers in overall and in each of the three reading strategy categories.

3.6.1 Differences related to GL1 reading strategies use

A statistically significant difference was indicated between the mean scores of skilled readers (M=2.52, SD = 0.30) and less ones (M= 2.41, SD= 0.32) just for the problem-solving reading strategy category (t =3.687 df= 453 p =0.000). In the overall GL1 reading strategies use, there was no significant difference (t =1.320 df= 453 p =0.188) between skilled readers' mean score (M= 2.28, SD=0.28) and less skilled readers' one (M= 2.24, SD=0.29). The difference between the means of skilled (M= 2.28, SD=0.34) and less skilled readers (M= 2.24, SD=0.33) was not significant neither in global reading strategies category (t =1.282 df= 453 p =0.200) nor in support reading strategies category (t = - 0.996 df= 453 p =0.320), where less skilled readers slightly surpassed skilled readers (M=2.10, SD= 0.37 vs M=2.06, SD= 0.39, respectively).

3.6.2 Differences related to EFL reading strategies use

Regarding EFL, the between-groups differences were statistically significant in the use of the overall reading strategies (t =4.205 df= 359.875 p =0.000) with mean scores 2.28 (SD = 0.28) and 2.14 (SD = 0.36) for skilled and less skilled EFL readers, respectively and in two of the three categories, namely problem solving reading strategies (t =5.838 df= 348.780 p =0.000) with skilled readers showing a 2.51 (SD = 0.32) versus a 2.29 (SD = 0.43) of less skilled readers and global reading strategies (t =4.799 df= 374.605 p =0.000) with a 2.31 (SD = 0.32) and a 2.14 (SD = 0.39) for skilled and less skilled readers, respectively. No significant difference was found regarding 'support' reading strategies use (t =0.195 df= 453 p =0.84), where mean scores were 2.03 (SD = 0.38) for skilled and 2.02 (SD= 0.42) for less skilled readers.

Table 10. Independent samples t-test significant results for EFL strategy items as the dependent variables and performance in EFL reading comprehension test (skilled versus less skilled readers) as the independent variable

EFL reading strategies	skilled (N=258)		less-skilled (N= 197)		ρ
	Mean	SD	Mean	SD	
(GLO) I have a purpose in mind when I read.	2.46	0.61	2.26	0.70	0.002**
(GLO) I think about what I know to help me understand what I read.	2.70	0.52	2.37	0.71	0.000***
(GLO) I think about whether the content of the text fits my reading purpose.	2.48	0.66	2.26	0.75	0.001**
(GLO) I review the text first by noting its characteristics like length and organization.	2.41	0.73	2.16	0.77	0.000***
(GLO)When reading, I decide what to read closely and what to ignore.	2.08	0.72	1.91	0.66	0.011*
(GLO)I use tables, figures, and pictures in the text to increase my understanding.	2.47	0.69	2.32	0.71	0.027*
(GLO) I use context clues to help me better understand what I am reading.	2.54	0.56	2.21	0.69	0.000***
(GLO) I use typographical features like bold face and italics to identify key information.	2.28	0.75	2.12	0.71	0.025*
(PRO) I try to get back on track when I lose concentration.	2.77	0.43	2.54	0.67	0.000***
(PRO) I adjust my reading speed according to what I am reading.	2.51	0.67	2.18	0.76	0.000***
(PRO) When text becomes difficult, I pay closer attention to what I am reading.	2.72	0.53	2.47	0.68	0.000***
(PRO) I try to picture or visualize information to help remember what I read.	2.44	0.73	2.20	0.78	0.001**
(PRO)When text becomes difficult, I re-read it to increase my understanding	2.63	0.56	2.41	0.72	0.000***
(PRO) When I read, I guess the meaning of unknown words or phrases.	2.44	0.71	2.18	0.75	0.000***
(SUP) I take notes while reading to help me understand what I read.	1.56	0.69	1.81	0.77	0.000***
(SUP) When reading, I think about information in both English and my mother tongue.	2.48	0.63	2.14	0.77	0.000***

Significance: *= p< 0.05, **= p< 0.01, ***= p< 0.001

Statistically significant differences were revealed between means of skilled and less-skilled readers for 16 of the total 30 individual EFL reading strategies (see Table 10). Skilled readers reported a much more frequent use of reading strategies than less-skilled readers apart from a support strategy highly used by the less-skilled ones. Problem-solving strategies had the highest representation (6 out of 8, 75%) followed by global strategies (8 out of 13, 62%) and support strategies (2 out of 9, 22%).

3.7 Differences in GL1 and EFL strategies use within group

Regarding the comparison of means between GL1 and EFL reading strategies use for each of the two groups, skilled and less-skilled readers, paired samples t-test results were computed (see Table 11). Statistically significant differences were revealed between means of GL1 and L2 reading strategies use overall and by each reading strategy category only for the group of less-skilled readers. More specifically, less-skilled readers demonstrated significantly less frequently reading strategy use in EFL than in GL1, whereas skilled readers reported almost the same use in both GL1 and EFL displaying only slight mean differences. In addition, the only case of more frequent reading strategies use in EFL than in GL1 was demonstrated by skilled readers in global reading strategy category.

Table 11. Paired samples test results for overall and for each reading strategy category use in GL1 and EFL by skilled and less-skilled readers

Reading strategy category	skilled (N =258) Mean (SD)		less-skilled (N =197) Mean (SD)	
	GL1	EFL	GL1	EFL
Global	2.28 (0.34)	2.31 (0.32)	2.24 (0.33)	2.14 (0.39)
T	- 1.519		3.740 **	
Problem-Solving	2.52 (0.30)	2.51 (0.32)	2.41 (0.32)	2.29 (0.43)
T	0.472		4.087 **	
Support	2.06 (0.39)	2.03 (0.38)	2.10 (0.37)	2.02 (0.42)
T	1.369		2.904 *	
Overall reading strategies	2.28 (0.28)	2.28 (0.28)	2.24 (0.29)	2.14 (0.36)
T	- 0.043		4.428 **	

Significance: *= p< 0.01, **= p< 0.001

4. Discussion and concluding remarks

This study investigated reported reading strategies use in GL1 and EFL by Greek-speaking students who attended the fifth and sixth grades of primary education, while reading school-related material. Performance in GL1 and EFL reading comprehension tests was also recorded.

It was revealed that students face reading comprehension difficulties in GL1 and EFL utilizing the same reading strategies, more frequently in GL1 though. In both languages, problem-solving strategies are mostly preferred followed by global and support strategies. Girls were proved to be more aware of their reading strategies use than boys reporting a more frequent use in both languages. Skilled readers were found to use reading strategies more effectively than less-skilled readers. They also appeared to know which GL1 reading strategies are more effective in EFL reading comprehension, so they successfully transfer them from GL1 to EFL whereas less-skilled readers failed to do so. Thus, linguistic threshold hypothesis (Cummins 1991) seems to be valid even for EFL young learners, who constitute the sample of this study.

Regarding the reported reading difficulties awareness in GL1 and EFL, boys were indicated to perceive EFL reading process as a more troublesome one than girls, which supports girls' higher EFL reading mean scores than boys'. Significant differences were also found between skilled and less-skilled readers. Less-skilled readers show awareness of more reading difficulties that have to do with their rate and fluency while reading, understanding the unknown words from the context and finding central ideas or even the main points of a text in both GL1 and EFL.

Computed high mean scores showed that students make frequent use of all reading strategies ranging from sometimes to almost always in both GL1 and EFL. This is due to the fact that English language is appreciated by Greek society as a means of social status and as a high status language for professional prospects. Being aware of that, EFL Greek students in higher elementary school grades sometimes try hard to manage their EFL challenges. However, the reported use of reading strategies in L1 was higher than in FL, a finding consistent with the results of Maarof and Yaacob's (2011) study. Lower EFL reading strategies use may be attributed to students' low level of EFL proficiency, mostly elementary and much less lower intermediate (Vrettou, 2011).

Participants' preference for 'problem-solving' reading strategies similarly in L1 and L2/FL followed by global and support strategies was also indicated in previous studies (Poole 2010; Alsheikh & Mokhtari 2011; Yüksel & Yüksel 2012). Problem-solving strategies are most preferable because they are the kind of 'top-down' strategies that contribute

to a more effective reading comprehension. The findings related to 'support' strategies, being students' least preference, are not in accordance with previous studies (Sheorey & Mokhtari 2001; Huang et al. 2009), who found that regardless of participants' reading abilities, 'support' strategies were mostly preferred. These contradicting results may be attributed to participants' different age and thus different L2/FL reading experience or to different culture.

According to the findings of this study, all reading strategies were commonly used in GL1 and EFL but differ in frequency of use in each language. Among the most preferable strategies in both languages were the following: trying not to lose concentration, paying closer attention or re-reading text when it becomes difficult and adjusting reading rate all problem-solving reading strategies. Background knowledge and use of figures in a text appeared to be the 'global' strategies more frequently used in EFL than in GL1 suggesting that students are aware of which strategies, in the less familiar EFL context, may lead to an effective EFL reading comprehension. The data related to the frequent use of 'global' strategies support the findings of previous studies (Griva et al. 2009; Garcia-Mila & Andersen 2007), which revealed that students can show metacognitive skills even from the age of 9 years and these skills are gradually improved during the last grades of primary school (Kolic'-Vehovec & Bajs˘anski 2006). Regarding 'support' strategies, such as taking notes, using reference materials and going back and forth to find relations among ideas in a text while reading are usually avoided perhaps because these strategies were not practiced in the specific teaching contexts. Translation in L1 while reading FL texts is another frequently used 'support' strategy in FL preceding in frequency almost half of the global strategies used, which is in vein with the results of Jimenez, Garcia, and Pearson's study (1996) on a group of bilingual students of the same age. They also found that translation is mostly used by less proficient L2/FL readers. In L1, the corresponding most frequently used 'support' strategy by students was 'restating ideas of the text in their own words to better understand what they read'.

Between-gender comparisons of reading strategies use by category as well as by each individual strategy revealed that girls show higher frequencies in both GL1 and EFL apart from EFL 'global' category where boys showed a higher preference, but not statistically significant. Statistically significant differences were revealed in both languages only in 'problem-solving' category. These results supported girls' better achievements in reading comprehension tests evidencing that were also aware of employing effective reading strategies. Girls' more extensive and flexible use of cognitive and metacognitive strategies is also supported by the results of other studies (Green & Oxford 1995; Griva et al. 2009; Griva et al. 2012). Significant differences between EFL individual reading strategies use were displayed in up to 7 out of 30 in total, mostly being problem-solving and support strategies, such as re-reading text or paying closer attention when text becomes difficult, guessing meaning of unknown words, underlining information, trying not to lose concentration and questioning themselves about the text.

Skilled readers reported to use more reading strategies in FL compared to less-skilled readers overall and in two of the three reading strategies categories that is, the 'problem-solving' and 'global' categories. This finding explains the higher performance of skilled readers in FL reading scores. However, in relation to L1, more frequent reading strategies use was declared by skilled readers in the 'problem-solving' category. The above between-groups results are in line with the findings of previous studies (e.g. Kong 2006; Alsheikh & Mokhtari 2011; Jimenez et al. 1996; Zhang 2001; Kolic et al. 2006; Taillefer & Pugh 1998; Tsai 2012; Zhang, Gu, & Hu 2008; Lau 2006; Griva et al. 2009; Geladari, Griva, & Mastrothanasis 2010) all revealing that more advanced readers use a wider range of strategies. The fact that skilled readers proved to be more flexible in employing strategies compared to less-skilled ones is an indicator of their awareness of using appropriate and effective strategies for reading comprehension purposes.

The results of the present study showed that skilled readers use reading strategies similarly in L1 and L2/FL, whereas less-skilled readers employed a lower number of reading strategies in L2/FL than in L1 overall. This finding is in vein with previous studies investigating reading strategies use in L1 and L2/FL addressed to adults or secondary students (Tsai et al. 2010; Davis & Bistodeau 1993; Phakiti 2003; Lee & Schallert 1997; Taillefer & Pugh 1998; Schoonen, Hulstijn & Bossers 1998; Kong 2006; Yamashita 2002).

5. Limitations of the study and future suggestions

One limitation of this study was the use of self-reported reading strategies questionnaire as basic instrument, providing thus information about students' perceived preference and not their actual use of reading strategies. A further study employing a qualitative approach, based on the 'think aloud process', to a representative smaller sample of the participants is suggested. Moreover, unstructured or semi-structured interviews could provide an in-depth interpretation of students self-reports validating the questionnaire's data.

Another limitation was that the factor of EFL proficiency was based on EFL reading comprehension scores grouping participants into skilled and less-skilled readers. It is possible that in studies assessing participants' proficiency level through a standardized test that measures EFL proficiency, participants may show different patterns of reading strategies preference in GL1 as well as in EFL. So, an implication for future research would be the classification of primary students into levels of EFL proficiency which might extend up to three, providing more accurate results regarding their reading strategies use.

Future studies should also consider the factors of different learning and teaching styles affecting students' reading strategies use. One would expect that a teaching context focusing on students' comprehending a text at macrolevel will have different impact on their comprehension monitoring and awareness of available effective reading strategies compared to such a teaching context focusing mostly at the microlevel of the text (e.g. vocabulary, grammar).

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