An Examination of Perceived Reading Strategy Use Among University Level Students

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Abstract

As a core language skill, reading has always occupied a prominent role in the process of language acquisition, with a strategic approach to its development contributing to greater reading competences and better learning outcomes. The present paper, thus, aims to explore variation in strategy use by study field, year of study and university type among 228 university-level students in Bosnia and Herzegovina employing the Survey of Reading Strategies (SORS). A one-way MANCOVA revealed a significant effect of the study field on the overall use of reading strategies with the age factor being controlled and a univariate ANOVA indicated that the study field significantly affected all strategy subtypes. More specifically, students in the field of psychology seem to be the most frequent users of reading strategies and their two subtypes, namely global and support strategies, whereas the students in the field of English language and literature most frequently use problem-solving strategies. Moreover, a two-way MANOVA showed a significant interaction effect of the university status and the year of study on the metacognitive reading strategy use, even though their main effects were insignificant. The current study findings may contribute to broader understanding of the overall as well as type-specific use of reading strategies by EFL learners of different backgrounds, thus setting out guidelines for the development of corresponding curricula and instructional design.

Keywords: metacognitive awareness, reading strategies, study field, grade, university status.

1. Introduction

Reading, as one of the key language skills (Maasum, Maarof, 2012), and, besides listening, an alternative means for gaining access to language input, occupies a prominent place in the process of second language acquisition. However, it has not always been approached the same way. Initially, it presented the medium for familiarizing with literature, served as a material for pronunciation practice and grammar-based analyses, or a means for transmitting messages from

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one code to another (Carrell et al., 1988; Richards, Rodgers, 2001). Later, gaining mastery of this skill was recognized as one of the prerequisites for successful language attainment (Krashen, 1999). It transpired that through reading learners receive native-like expression, whose interpretation involves the application of linguistic as well as extralinguistic knowledge. In addition to this, highly developed reading skills significantly improve general content understanding (Yang, 2004) and contribute to a higher overall academic achievement (Anderson, 1999; Day, Bamford, 1998). Thus, full potential of reading should be extensively explored and a strategic approach to its development adopted (Hamzić, Bećirović, 2021).

Bearing this in mind, we attempted to investigate the use of metacognitive reading strategies, i.e. "intentional, carefully planned techniques by which learners monitor or manage their reading" (Sheorey, Mokhtari, 2001: 436). Such an active learners' involvement in the whole reading process, from planning, over monitoring to evaluating, has been shown to significantly contribute to successful reading and higher proficiency attainment (Carter, Nunan, 2001; Carrel, 1991; Chamot, 2005; Griffith, Ruan, 2005; Iwai, 2011; Oxford, 1990; Pressley, Afflerbach, 1995; Sheorey, Mokhtari, 2001; Sinanović, Bećirović, 2016; Taraban et al., 2000; Zare, 2013). Moreover, an effective use of metacognitive reading strategies generally leads to better self-regulation (Nash-Ditzel, 2010), better information comprehension and more effective application of newly acquired knowledge (Gourgey, 2003), which present necessary communication and practical skills needed in everyday life (Bećirović, Polz, 2021). Therefore, following strategic steps while performing a reading task should be promoted in teaching practice whenever possible and at all educational stages, including a university level (Stahl, Armstrong, 2018)

The current study is placed in the tertiary-education context of Bosnia and Herzegovina, the country where English seems to permeate all spheres of life (Delić et al., 2018; Dubravac, 2016; Dubravac et al., 2018; Dubravac, Skopljak, 2020; Kajtazović, 2012; Skopljak, Dubravac, 2020) and where English proficiency appears to be highly required (Kovačević et al., 2018). Despite such a strong and permanent presence of English in this context, either through formal instruction in the educational milieu or informal acquisition via the Internet, TV etc., Bosnian students still struggle to achieve the required competences, including reading competences (Dubravac, 2018; Kovačević et al., 2018). This might be at least partly changed by effective strategic behavior in various aspects of language use, including reading. Taking all the aforementioned into account, the present study aims to explore Bosnian EFL learners' perceived use of reading strategies by measuring whether the year of study, study field and university status, individually or in interaction, affect the level of metacognitive awareness of reading strategy application. These research findings may aid both teachers and students in selecting appropriate teaching methodology and reading strategies on the way of achieving desired learning outcomes.

Literature review

Owing to immense benefits metacognitive strategies yield, they have sparked a great research interest (Carrel, 1998; Carter, Nunan, 2001; Cohen, 1998; Griffiths, 2013; Griffiths, Oxford, 2014) resulting in numerous classifications and the development of various instruments (e.g. Oxford, 1990; Sheorey, Mokhtari, 2001). One of such instruments, frequently employed in the context of second and foreign language acquisition, is the Survey of Reading Strategies (SORS) (Mokhtari, Sheorey, 2002; Sheorey, Mokhtari, 2001), which explores students' awareness of the use of three subtypes of reading strategies, namely global (GLOB), problem-solving (PROB) and support (SUP) strategies. Global strategies include preparatory activities, problem-solving comprise actions performed during a reading task, whereas support strategies refer to additional activities such as paraphrasing, summarizing, and using dictionaries (Mokhtari, Reichard, 2002: 259).

The studies seeking to systematically explore the use of metacognitive strategies by EFL learners in diverse learning contexts, such as Costa Rica, Bahrain, Croatia, Turkey, Japan, Iran (Anderson, 2003; Malcolm, 2009; Mikulec, 2016; Shikano, 2013; Solak, Altay, 2014; Yuksel, Yuksel, 2012; Zare, Maftoon, 2014) have reported a moderate to high students' awareness of reading strategies. Problem-solving strategies appear to be the most frequently and support strategies the least frequently employed in a large number of EFL contexts (Anderson, 2003; Malcolm, 2009; Meniado, 2016; Mokhtari, Reichard, 2004; Solak, Altay, 2015; Yuksel, Yuksel, 2012; Zare, Maftoon, 2014). On the other hand, only a few studies have indicated the prevalence of global (Chen, Chen, 2015) or support reading strategies (Jafari, Shokkrpour, 2012; Sheorey, Babocky,

2008; Sheorey, Mokhtari, 2001; Tavakoli, 2014). The most frequent use of problem-solving strategies suggests that EFL learners take an active role in the process of reading and vigorously try to surmount reading difficulties as they arise by using tactics such as rereading, closer inspection, focusing, and similar. Such conscious awareness and ability to monitor the cognitive processes that they are involved in allow for their classification into skilled and efficient readers (Sheorey, Mokhtari, 2001). Conversely, a lower use of support strategies in different EFL contexts points to the users' non-reliance on some support reference material and dictionaries (Mokhtari, Reichard, 2002).

However, in many instances, it has been shown that the type and the extent to which specific strategies tend to be employed is affected by different variables, such as age (e.g. Alhaqbani, Riazi, 2012, Malcolm, 2009), gender (e.g. Bećirović et al., 2018), study field (e.g. Jafari, Shokrpour, 2012; Mochizuki, 1999; Peacock, 2001; Wu, 2005) and others.

Oxford and Nyikos (1989) analysed the use of strategies by 1200 foreign language students, and found that the students majoring in humanities/social sciences/education used functional practice strategies and resourceful independent strategies more than the technical majors. The same group of participants also showed greater awareness of metacognitive strategies, which might be attributed to a greater need for independent language development outside of the educational milieu. Likewise, Mochizuki (1999) conducted a study in the Japanese context, and indicated that the students of English used compensation, social and metacognitive strategies more frequently than the students of science and agriculture. Furthermore, Peacock (2001) compared the students of physics, mathematics and engineering. The findings revealed that the science students employed fewer cognitive strategies than the other two groups, while the students of mathematics were the least frequent users of metacognitive strategies.

However, the studies employing SORS as an instrument for gathering data (Jafari, Shokrpour, 2012; Park, 2010; Shikano, 2013; Tabtabaei, Assari, 2011; Wu, 2005; Zare, Maftoon, 2014) have revealed conflicting results. Jafari and Shokrpour (2012) compared the use of metacognitive strategies by 81 Iranian students majoring in environmental health, occupational health, safety and midwifery, and their findings showed that the first group of participants surpassed all the others in terms of the frequency of strategy use. Similarly, Wu (2005) suggested that the Taiwanese college students in applied foreign language and education used more metacognitive reading strategies than those of food beverage management and applied math. The same conclusions were reported in Park (2010). Park (2010) showed that the education/social science/humanities students employed metacognitive strategies most frequently, followed by the business students and the least active users proved to be the students of science and engineering. Conversely, Shikano (2013) and Tabatabaei and Assari (2011) showed that no such differences existed between the students of social studies and engineering in Japan, as well as between the medical students, computer engineering and law students in Iran, respectively. Interestingly, when students of different foreign languages, namely Arabic, Russian, and English were compared in terms of reading strategy awareness (Talebi et al., 2020), the last group of learners showed supremacy over the first two.

On the other hand, the findings pertaining to the relationship between the awareness of strategy use and year of study appear to be less conflicting. Higher-level students generally tend to demonstrate a more extensive use of strategies than lower-level students, as reported by Alhaqbani and Riazi (2012), who explored the metacognitive reading strategy use by 122 L2 Arabic students, then by Cogmen and Saracaloglu (2009), whose participants were 230 college students at Pamukkale University in Turkey and Malcolm (2009), who investigated strategy use among 160 students at a school of medicine in Bahrain.

In line with previous research, the studies exploring metacognitive strategy use in the context of Bosnia and Herzegovina (Bećirović et al., 2017; Bećirović et al., 2018) have indicated that Bosnian students are moderate to high strategy users, their strategy utilization being affected by different socio demographic factors. Distributing the Metacognitive Reading Strategies Questionnaire (Taraban et al., 2004) among 140 English and Management students, Bećirović et al. (2017) came to the conclusion that variables such as gender, year of study and study field significantly contribute to a higher strategy use, whereas nationality was shown to be an insignificant factor in this research context. Thus, the female students were shown to foster a higher metacognitive awareness than the male students and the students at the higher year of study proved to be more strategic readers than the lower grade students, with the English language students surpassing the management students in terms of the frequency of metacognitive strategy

use. Likewise, using SORS, Bećirović et al. (2018) identified gender as a significant factor contributing to a higher strategy use as the female students were shown to be better strategic readers than the male counterparts. Besides gender, the impact of some other factors, namely grade point average and nationality, on the use of reading strategies was measured and proved insignificant despite some minor differences existing between the groups. The current study will contribute to broader understanding of the overall as well as type-specific use of metacognitive reading strategies among Bosnian university level students. In fact, its purpose is to investigate the relationship between the year of study, study field and university status and students' metacognitive reading strategies. Taking into consideration that the year of study, study field and university status have not been researched by means of using SORS in the Bosnian university educational milieu, the current study provides novel findings particularly since their main and interaction effects on the use of metacognitive reading strategies are being measured. Thus, the research will test the following hypotheses:

H1 Perceived reading strategy use, including the strategy subtypes, namely global, problem solving and support, will differ by study field when the factor of age is controlled.

H2 Year of study and university status will interact in the effect on the perceived reading strategy use, including the strategy subtypes, namely global, problem solving and support.

H3 Perceived reading strategy use, including the strategy subtypes, namely global, problem solving and support, will differ by university status.

H4 Perceived reading strategy use, including the strategy subtypes, namely global, problem solving and support, will differ by the year of study.

2. Method
Participants

The research sample encompassed 228 university-level students, who were selected by applying a convenience sampling method. The participants were studying at three different universities in Bosnia and Herzegovina, one public university situated in Zenica and two private universities in Sarajevo Canton. The number of public-university students was 53, whereas the number of the students studying at two private universities was 115 and 60, respectively. While private universities foster an international spirit and thus host students not only from the Balkan region but also from other world countries, the students studying at the public university come from Bosnia and Herzegovina only. Thus, the sample consisted of 131 students of Bosnian origin, 65 Turkish students and 32 students from other world countries. 149 participants were female and 79 participants were male students, with their age spanning from 18 to 35 (M = 21.4, SD = 2.43). The participants were either freshmen, sophomore, junior or senior level students studying at three different departments, namely the Department of English Language and Literature (ELL), the Department of Psychology and the Department of Genetics and Bioengineering. A detailed description of the participants is provided in Table 1. All the participants were minimally at B2 level of proficiency in English since they had all passed the English proficiency test before starting their tertiary education.

Table 1. The participants

		N	Percent
University Status	Private 1	115	50.4
	Public	53	23.02
	Private 2	60	26.3
Study field	ELL	120	52.6
	Psychology	60	26.3
	Genetics and bioengineering	48	21.1
Year of study	First study year	66	28.9
	Second study year	54	23.7
	Third study year	27	11.8
	Fourth study year	81	35.5
Total		228	100

Measures

To measure the frequency of students' perceived use of different reading strategies, the Survey of Reading Strategies (SORS), developed and validated by Mokhtari and Sheorey (2002), was employed. The instrument comprises 30 statements using a five-point Likert scale ranging from 1 ("I never or almost never do this") to 5 ("I always or almost always do this") with a higher number selected by respondents indicating a more frequent use of the specific strategy. The three subtypes of reading strategies compose three subscales, namely global reading strategy (GLOB) (13 items), support reading strategy (SUP) (8 items), and problem solving strategy subscale (PROB) (9 items). The global strategy subscale item example is "I take an overall view of the text to see what it is about before reading it", the support strategy subscale's item example is "I take notes while reading to help me understand what I read", whereas the problem solving strategy subscale item example is "when text becomes difficult, I re-read it to increase my understanding". Cronbach Alpha was also used to determine the internal consistency reliability coefficients. The data showed an acceptable level of reliability scores for the overall scale of reading strategies α = 0.89 as well as for all three reading strategy subtypes, namely global reading strategies α = 0.79, support reading strategies α = 0.69 and problem solving strategies α = 0.74. Internal consistency reliability coefficients were slightly lower than the reliability scores of the original scale which were as follows: global reading strategy α = 0.92, support reading strategy α = 0.87, problem solving strategy α = 0.79 and the overall scale α = 0.93 (Mokhtari, Sheorey, 2002: 3).

The instrument was composed of two distinct sections: (1) a demographic survey and (2) SORS containing items indicating the reading strategy type.

Procedures

After the researchers gained a formal consent from the universities' administration, they distributed the instrument to the students in the respective universities' classrooms and provided an adequate explanation on how it ought to be filled in. The average time spent on completing the instrument was 20 minutes. The original English version of SORS was administered to the participants due to the fact that the participants from the public university are English Language Department students and English is the medium of instruction at all departments at the two private universities. Thus, the translation of the instrument was not a necessary requirement.

Data Analysis

Prior to the analysis, screening the data for missing cases and outliers was performed. Normality, linearity, homoscedasticity and homogeneity of variance-covariance matrices were examined to ensure that the underlying assumptions for performing multivariate analysis were met (Mertler, Reinhart, 2016). To determine the type and frequency of specific strategy usage, frequencies and means for SORS and its subscales were computed. The guidelines offered by the authors of SORS were applied in the process and the interpretation of the scores on the scales was based on the key provided by the authors (Mokhtari, Sheorey, 2002). Thus, three levels of reading strategy usage were valued as high (M = 3.50 or higher), moderate (M = 2.5 to M = 3.49), and low (M = 2.49 and below). In order to assess how well the model fits the data Confirmatory Factor Analysis (CFA) was performed by using AMOS 23 with the same number of participants (N = 228).

A one-way MANCOVA was employed to determine the effect of the study field on reading strategies with age being controlled. Since the participants' age ranged from 18 to 35 and the standard deviation was 2.43, controlling the influence of students' age on measuring the influence of three different study fields produced more accurate results. This assumption is based on the fact that various factors acting and interacting together simultaneously affect dependent variables (Gravetter, Wallnau, 2008).

In order to examine the effects of the university status and year of study on GLOB, SUP, and PROB a two-way MANOVA was employed and the follow-up comparison procedures were conducted to determine interaction effects. According to Stevens (2001), independent variables affect participants in more than one way and a multivariate analysis thus provides a more holistic picture.

3. Results
Preliminary Analyses

Descriptive results in terms of means and standard deviations (SD) are presented in Table 2 showing that the participants achieved the highest score on the problem solving strategies subscale.

The normality distribution of dependent variables, namely global reading strategies, support reading strategies, and problem solving strategies, was tested by examining skewness and kurtosis. The results of the normality test are also presented in Table 2 showing that the skewness and kurtosis scores are within the acceptable range from -1 to +1 (Hair et al., 2010), indicating that there are no significant deviations of all dependent variables from the normal distribution. The scores of Pearson correlations among the dependent variables are presented in Table 2. The outcomes of a correlation analysis show strong and significant correlations between all dependent variables.

Table 2. Descriptive analysis, normality and reliability

Variables	Mean	SD	Skewness	Kurtosis	α	1	2	3
1. Global reading strategies	3.47	.61	.127	-.090	0.79	1		
2. Support reading strategies	3.47	.67	.144	-.428	0.69	.705**	1	
3. Problem solving strategies	3.78	.62	-.221	-.323	0.74	.701**	.627**	1

** Correlation is significant at the 0.01 level (2-tailed)

Factor Analysis

A factor analysis is a multivariate technique (Sawaki, 2012) used for examining the relationships among variables (Ockey, Choi, 2015). In our study a Confirmatory Factor Analysis (CFA) was conducted on the original 30 items of the Reading Strategy Questionnaire using AMOS 23. The analysis resulted in relatively unsatisfactory model fits with $\chi^2 (402) = 832.7$ ($p < .001$), root mean square error of approximation (RMSEA) = .07, comparative fit index (CFI) = .73, Tucker–Lewis index (TLI) = .71, and adjusted goodness of fit index (AGFI) = .77. Since the analysis resulted in a relatively unsatisfactory model fit, the factor loadings for 30 items were inspected and two items, one from the global reading subscale and one from the problem-solving reading subscale, were removed because of weak factor loadings (i.e., less than .60). A Confirmatory Factor Analysis (CFA) was conducted again and showed a relatively improved model. The modification index was examined with few co-variances suggested to be freely estimated and these suggestions were adopted and the model was modified. A Confirmatory Factor Analysis (CFA) was run again with the remaining 28 items and modifications, and the model fit improved to $\chi^2 (280) = 500.2$ ($p < .001$), RMSEA= .06, CFI = .84, AGFI = .83, TLI = .813, which can be considered acceptable model fits.

The Effects of the year of study, study field and university status on the Reading Strategy Use

A one-way MANCOVA was employed to determine the effect of the study field on reading strategies with age being controlled. The main effect of the study field Pillais' Trace = .114, $F (8, 444) = 3.37$, $p = .001$ indicated a significant effect on the combined dependent variable of reading strategies. The multivariate effect size was estimated at $\eta p^2 = .057$. The covariate of age insignificantly influenced the combined dependent variables Pillais' Trace = .034, $F (8, 221) = 1.92$, $p = .109$, multivariate $\eta p^2 = .034$. The univariate ANOVA results indicated that the study field significantly affected all strategies together $F(2, 224) = 5.79$, $p = .004$, $\eta p^2 = .049$, and individually global reading strategies $F(2, 224) = 4.23$, $p = .016$, $\eta p^2 = .036$, problem solving strategies $F(2, 224) = 4.54$, $p = .012$, $\eta p^2 = .039$ and support reading strategies $F(2, 224) = 7.26$, $p = .001$, $\eta p^2 = .061$, while the covariate of age did not significantly affect the overall or individual reading strategy usage. Table 3 displays group means and standard deviations for SORS and its subscales. A comparison of means indicated that the students who studied psychology used reading strategies more frequently, overall, as well as global and support reading strategies, whereas the students who studied at the Department of English Language and Literature used problem solving strategies most frequently. The students studying at the Department of Genetics and Bioengineering employed reading strategies least frequently, overall as well as their subtypes, namely global, support and problem solving reading strategies.

Table 3. Multivariate ANOVA on reading strategies between groups based on study field

Strategy	English LL		Psychology		Genetics and Bioengineering		*p*	ηp²
	M	*SD*	*M*	*SD*	*M*	*SD*		
Global reading strategies	3.46	.61	3.62	.58	3.27	.58	.016	.036
Support reading strategies	3.50	.68	3.61	.64	3.18	.61	.001	.061
Problem solving strategies	3.88	.59	3.75	.64	3.32	.60	.012	.039
All Strategies	3.58	.55	3.65	.56	3.32	.52	.004	.049

A two-way MANOVA was conducted to determine the effects of the university status and year of study on the use of reading strategies, including the three subscales. A factor interaction between the year of study and university status was examined and it revealed a significant effect Wilks' λ = .906, F (9, 530.70) = 2.40, p =. 010, ηp² = .032. Even though there was a significant interaction effect of the year of study and university status on the combined variables of reading strategies, the main effects were also determined as well as their strength. The main effect of the university status was insignificant Wilks' λ = .995, F (3, 218) = .339, p =. 797, ηp² = .005 as was the main effect of the year of study Wilks' λ = .932, F (9, 530.70) = 1.74, p =. 078, ηp² = .023.
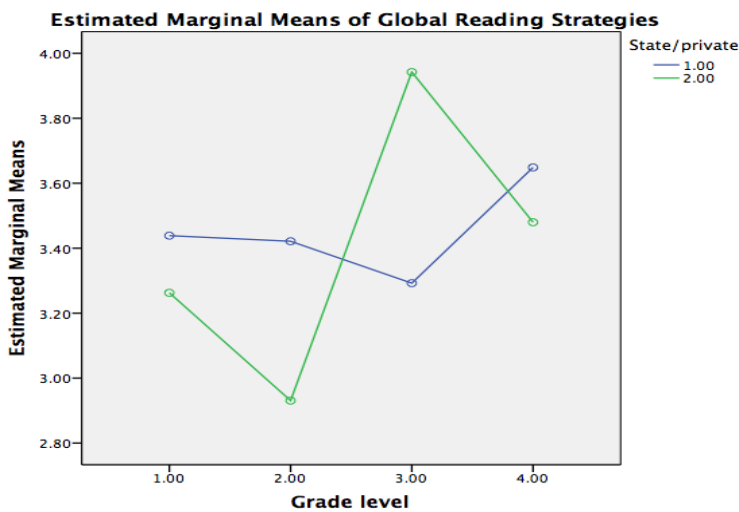

Fig. 1. University Status Differences between Year of study Groups in Global Reading Strategies

A univariate ANOVA showed that the year of study had a significant effect on the overall use of reading strategies $F(3, 220) = 3.31, p = .021, ηp² = .043$ and global reading strategies individually $F(3, 220) = 4.50, p = .004, ηp² = .058$, while it had an insignificant effect on problem solving $F(3, 220) = 1.79, p = .151, ηp² = .024$ and support reading strategies $F(3, 220) = 1.64, p = .179, ηp² = .022$ (Table 4). The effect of the university status on any of the reading strategies was insignificant (Table 5).

Table 4. Multivariate ANOVA on reading strategies between groups based on grade level

Strategy	1ˢᵗ grade		2ⁿᵈ grade		3ʳᵈ grade		4ᵗʰ grade		*p*	ηp²
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Global reading strategies	3.36	.60	3.33	.59	3.58	.70	3.60	.57	.004	.058

Support reading strategies	3.37	.75	3.41	.66	3.55	.79	3.55	.60	.179	.022
Problem solving strategies	3.66	.64	3.74	.64	3.77	.67	3.92	.55	.151	.024
All Strategies	3.44	.59	3.46	.54	3.62	.70	3.67	.49	.21	.043

The year of study and university status significantly interacted on reading strategies overall $F(3, 220) = 3.39$, $p = .019$, $\eta p^2 = .044$, as well as on global $F(3, 220) = 5.07$, $p = .002$, $\eta p^2 = .065$ (Figure 1), and problem solving reading strategies $F(3, 220) = 2.94$, $p = .034$, $\eta p^2 = .039$ (Figure 2) whereas they did not interact on support reading strategies $F(3, 220) = .94$, $p = .423$, $\eta p^2 = .013$.

Table 5. Multivariate ANOVA on reading strategies between groups based on the type of university

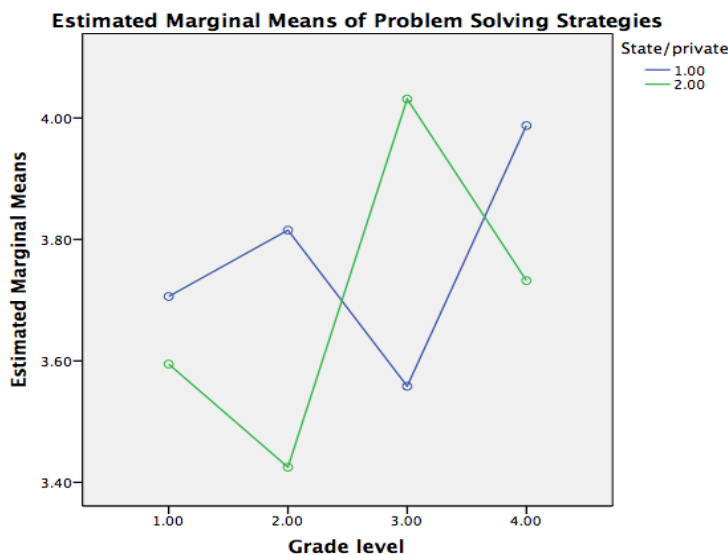|	Private University		State University			
Strategy	*M*	*SD*	*M*	*SD*	*p*	ηp^2
Global reading strategies	3.39	.59	3.55	.61	.614	.001
Support reading strategies	3.45	.70	3.47	.66	.996	.000
Problem solving strategies	3.68	.61	3.83	.62	.458	.003
All Strategies	3.49	.56	3.57	.56	.653	.001

Fig. 2. University Status Differences between year of Study Groups in Problem Solving Strategies

4. Discussion

The present study was designed to investigate the main effect of the participants' study field as well as the main and interaction effects of university status and year of study on their perceived use of reading strategies and their three subtypes, namely problem solving, global and support reading strategies. Thus, the first hypothesis stating that the use of reading strategies, including the three subscales, will differ based on the participants' study field when the age factor is controlled was supported, as the difference in the use of reading strategies, overall and different subtypes,

among the students studying at different departments was significant. Based on the SORS key provided by Mokhtari and Sheorey (2002), the overall usage of reading strategies by the participants majoring in the field of psychology and those majoring in English language and literature was measured high, whereas the usage of strategies by the students majoring in the field of genetics and bioengineering was moderate. Furthermore, the students majoring in the field of psychology achieved a high score on all three subscales, and their use of reading strategies, overall as well as global and support reading strategies, was at the highest level in comparison to the use of the same strategies by the students majoring in two other study fields. On the other hand, the students majoring in English achieved a high score on problem solving and support reading strategy subscales and a moderate score on the global reading strategy subscale, and their use of problem solving strategies was the highest in comparison to all the other students. The students majoring in the field of genetics and bioengineering reported a moderate use of global and support reading strategies as well as a high use of problem solving strategies. Still, they achieved the lowest score overall and on all the subscales. Such results showing that the participants majoring in the field of psychology and English language showed greater metacognitive awareness and a more extensive perceived use of reading strategies than the participants majoring in the field of genetics and bioengineering confirm some of the previous findings which indicated that students majoring in the field of humanities, social sciences and education foster deeper awareness of reading strategies and use them more extensively than the students majoring in the field of natural and technical sciences (Mochizuki, 1999; Oxford, Nyikos, 1989; Peacock, Ho, 2003; Rong, 1999).

In addition to this, it is important to mention that all the present study participants reported the most frequent use of problem solving reading strategies, the findings which converge with those of other studies, including the studies conducted in the neighbouring countries (Karbalaei, 2010; Mikulec, 2016; Mokhtari, Reichard, 2004; Zare, Maftoon, 2014, etc.). This indicates that the current study participants are actively involved in the reading process and use different tactics, such as close reading, sharp focus and rereading for complete understanding of the reading material. The fact that the students majoring in English language and literature reported a more extensive usage of problem solving strategies than the students majoring in psychology and genetics and bioengineering might be explained by the fact that during their studies these students focus on language a lot and constantly try to acquire deep understanding of the text, by working directly with it, eliciting word meaning, analyzing sentence structure and discussing the issues that arise. They are often required to write reading and writing journals in which they reflect on how they understand a wide range of texts, which entails the application of general knowledge in addition to English language knowledge.

On the other side, the most conspicuous observation to emerge from the data comparison is the one indicating that the students majoring in psychology surpassed the students majoring in English language and literature in the use of reading strategies overall and two subtypes, namely global and support reading strategies, which seems to be in sharp contrast with the results of a number of studies singling out foreign language students as more regular strategy users than the students majoring in other fields (Mochizuki, 1999; Peacock, Ho, 2003; Rong, 1999).

Such high scores achieved by the psychology students included in the current research might be due to the fact that the means of instruction at that department is English and the curriculum is designed in such a way that it incorporates some courses related to developing reading skills. Thus, the psychology students' frequent exposure to English requires them to have good English language skills as well as to allocate some extra time to independent language learning outside the formal learning environment. Still, the fact that they use reading strategies overall as well as global and support reading strategies more frequently than language students indicates that they approach the text with more preparation, spend more time previewing it, use more support mechanisms such as dictionaries and underline and highlight textual information, whereas language students try to understand the meaning of words on their own and reread the text to improve comprehension.

Furthermore, the current findings indicating a significant difference in the use of reading strategies among the students studying at different departments, share some similarities with Park's (2010) findings, which revealed a significant difference in the overall use of reading strategies among the students majoring in humanities, social sciences, business, education and science and engineering, as well as with the Tabatabaei and Assari's findings (2011) showing a few significant differences only in the individual use of strategies across different disciplines, namely

medicine, computer engineering and law. However, these findings are not fully aligned as Park (2010) measured an insignificant difference in the use of all strategy subtypes whereas Tabatabaei and Assari (2011) pointed to an insignificant difference in the overall use of reading strategies. Likewise, the current findings diverge from the findings of Zare and Maftoon (2014), which revealed that MA students of engineering, physics and communication did not significantly differ in their overall use of metacognitive reading strategies as well as in their use of problem solving, global and support reading strategies respectively. Moreover, the current study findings do not confirm the findings presented in Shikano (2013), which indicated that the use of metacognitive reading strategies does not depend on the academic field, as no significant difference was found in their use between the humanities/social science students, on the one hand, and the science and engineering students, on the other hand.

The second hypothesis stating that there will be a significant interaction effects of the year of study X university status on SORS and three reading strategy subscales was supported, as the interaction effects of these two factors on SORS were significant despite the fact that their individual main effects on SORS were insignificant. Furthermore, the interaction effect of the year of study X university status on the participants' use of problem solving and global reading strategies was also significant. Such results indicate that the effect of the year of study on the overall as well as individual use of some strategy subtypes largely depends on the university status. Though both private and public university students follow curricula which bear close similarity and are approved by the same institution, namely the Ministry of Education, still these curricula differ both contentually and structurally and the courses are spread differently across study years, which might corroborate the current findings about the interrelatedness between the year of study and the university status. The first possible explanation that emerges for the analysis of the curricula applied at these different institutions is that the specific courses focusing on the development of students' reading skills and their reading comprehension are spread differently across study years at private and public universities. At private universities, such courses mainly span across the first two study years, while at the same time at the public university, at the ELL department specifically, such courses are incorporated into a broader course striving to develop all skills and they span across all four study years. This might be corroborated by the current study findings which reveal that the first- and second-year students at two private universities use metacognitive reading strategies more frequently than the first- and second-year students at the public university. Though this trend does not continue in the third study year and the third-year students at private universities use strategies less frequently than the third-year students at the public university, this changes in the final study year and the fourth-year students at private universities show greater metacognitive awareness than the same group of students at the public university. Such results suggest that it might be more beneficial and effective to incorporate the courses focusing on the development of language skills in the first two study years as this practice leads to a higher strategy usage in the first study years but also ahead.

Moreover, we hypothesized that the university status will have a significant effect on SORS and three reading strategy subscales. The findings of the current study did not support the posed hypothesis, as they indicated no significant difference between the public university students, on the one hand, and the private university students, on the other hand, in their overall and individual strategy usage. Both private and public university students reported a high overall usage of reading strategies as well as a high usage of problem solving and a moderate usage of global and support reading strategy respectively, with the former using metacognitive reading strategies a bit more frequently than the latter. Still, the differences between the private and public university students are insignificant, which is not unexpected, as the curricula applied at both private and public universities in the country are approved by the same institution, namely the Ministry of Education, and are similar. Moreover, as stated earlier, the state university students encompassed only students studying at the Department of English language and literature, who, as suggested in some previous research (Mochizuki, 1999; Wu, 2005), commonly foster greater strategy awareness than the students majoring in other fields, which might have contributed to such research results and should be taken into consideration in future research studies. As indicated earlier, the curricula followed at these two universities are rather similar and they are approved by the same institution and there are only a few differences related to how the courses are spread across study years. Though the difference in the structure of curricula and the order of courses developing reading skills and improving reading comprehension might be claimed to lead to a larger usage of strategies by private university students,

still these results are insignificant and point to the fact that metacognition is developed in a different way and at different stages at these two types of universities and departments.

The hypothesis stating that the use of reading strategies will differ based on the students' year of study was supported as it was shown that the year of study had a significant impact on the overall reading strategy use (SORS) and on the use of global reading strategies. The third-year and fourth-year students tend to use reading strategies very frequently and their usage of reading strategies overall and their three subtypes was measured high. On the contrary, the first-year and second-year students obtained a moderate score overall and on the global and support reading strategy subscales and a high score on the problem solving subscale. Such findings indicate that the use of strategies overall increases with the study progress and that the students who have spent more time in the academic educational environment exhibit greater awareness of reading strategies. It is peculiarly interesting to notice that, despite a significant difference existing in the reading strategy usage among students at different years of study, still in some aspects students of senior years exhibited either the same or even lower metacognitive awareness. For example, the third-year and fourth-year students achieved exactly the same score on SORS and on the support reading strategy subscale, while the third-year students achieved a slightly higher score on the global reading strategy subscale. Likewise, the first-year students achieved higher scores than the second-year students both on SORS and on all reading strategy subscales, which might be attributed to individual participants' characteristics and their proficiency level that has not always been shown to correspond with the study year progress (Brdarević-Čeljo et al., 2018). Such findings are closely related to the results of some previous studies (Cogmen, Saracaloglu, 2009; Malcolm, 2009; Oxford, 1994), which also pointed to an increased use of strategies by higher-level students and are fully in line with the findings presented in Alhaqbani and Riazi (2012), which likewise indicated much greater usage of reading strategies, overall and individually, by the fourth-year and third-year students than by lower-level students. Academic and field expertise development is believed to improve students' reading competency which, in turn, enhances their metacognitive awareness (Alhaqbani, Riazi, 2012; Baker, 2008; Malcolm, 2009; Pressley, Afflerbach, 1995). Thus, students with more academic experience and more knowledge in their respective fields seem to be more competent strategic readers able to manage and direct the use of reading strategies in the most useful way.

The evidence from this study implies that teaching reading strategies ought to be included into the curricula designed for all study fields, particularly so for the field of natural science and engineering, as the reading strategy usage improves reading comprehension and consequently contributes to establishing a more effective learning pattern (Alexander, Jetton, 2010). Accordingly, various workshops and seminars should be organized to train the teaching staff how to teach reading strategies effectively. The existence of a significant difference in the use of reading strategies based on the students' study field implicates that a more structured and field-specific approach to teaching reading strategies needs to be adopted. Likewise, the differences in the use of strategies by students of different study years and an occasional lower usage of strategies by students of higher study years imply that curriculum revision ought to be made and care should be taken that the courses implementing reading strategy instruction are incorporated within the curricula applied at different departments and should be also taught from the outset of university education.

4. Conclusion

The current study has some limitations, which could serve as suggestions for further research. Firstly, the students' proficiency levels were not measured by means of a proficiency test. The proficiency exam test results would have given us a better insight into their real proficiency level and we would have been able to determine whether there exists a clear relationship between students' proficiency and their study field. Still, we need to emphasize that all the private university students need to pass the proficiency exam before starting the study program and need to achieve the B2 proficiency level so that they can attend the classes held in English. Secondly, students' reading ability could have been measured and its relationship with the use of reading strategies established, which might be taken into account in future enquiries.

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