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Investigating reading comprehension and learning styles in relation to reading strategies in L2

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Abstract

This study aims to investigate the extent to which reading comprehension and learning styles are related to perceived use of reading strategies among students studying French at an Australian university and a Turkish university. Ninety-one participants completed a background questionnaire, the Survey of Reading Strategies, the Kolb Learning Style Inventory 3.1 as well as a reading comprehension test. The findings revealed a small negative correlation between perceived use of reading strategies and reading comprehension for all participants and, in particular, for the Australian subgroup; however, correlation coefficients were not statistically significant. Furthermore, the findings indicated that the participants with converging styles reported the highest usage of strategies in both subgroups and that converging learning styles influenced perceived use of reading strategies. In light of its findings, this research calls for larger-scale studies investigating the relationship among learning styles, reading comprehension, and reading strategies of language learners.

Keywords: French as a second language, Kolb Learning Style Inventory, learning styles, perceived use of reading strategies, reading comprehension

Reading is, by no means, a passive activity. From a psycholinguistic point of view, the reading process encompasses many activities that start with the first apprehension of printed features by the reader's eye to the production of textual comprehension. For successful comprehension to occur, the reader extracts and integrates various pieces of information from the text and interprets this information by combining it with his or her background knowledge (Koda, 2005). The interaction between the reader and the text may be described not only in terms of process or system but also in transactional terms, where the act of reading may be viewed as an event or as a holistic act, as defined by Rosenblatt (1994), in which the cognitive, metacognitive, affective and social dimensions have fused. Thus, reading can be thought of as a highly dynamic and complex process, in which many factors—such as the reader's background knowledge, personal

factors, strategic processes, task demands and the reading context—influence comprehension (Anderson, 1999; Grabe, 2009; Grabe & Stoller, 2002; Koda, 2005; Wilkinson & Son, 2011).

Over the past thirty years, many second language (L2) studies have focused on the reading process to understand the differences between successful and less successful readers. These studies have advocated that reading strategies—defined as "deliberate and conscious procedures used by readers to enhance text comprehension" (Sheorey & Mokhtari, 2001, p. 433)—are essential to reading comprehension. Early L2 research generally suggested that successful readers used different strategies than less successful readers (e.g., Block, 1986; Carrell, 1989; Hosenfeld, 1984). The studies carried out more recently have shown that, although there are no specific sets of strategies used by successful readers, successful readers use strategies more effectively (Anderson, 1991; Bouvet, 2002) or more frequently (Thampradit, 2006) than less successful readers. Furthermore, Sheorey and Mokhtari (2001) have argued that the combination of the awareness of strategic reading processes and the actual utilization of reading strategies distinguishes the skilled from the unskilled readers. As stated by Grabe (2009), recent L2 reading research asserts that successful readers use a wide range of strategies effectively and that they know how to use combined strategies, depending on their goals, reading tasks, and strategic processing abilities.

In addition to the actual implementation of reading strategies, the recognition of the critical role of reading strategy awareness in the reading process has also prompted several studies to focus on language learners' *perceived* use of reading strategies and reading ability. For example, a number of researchers have found a relationship between learners' perceived use of reading strategies and self-rated reading ability (Alhaqbani & Riazi, 2012; Mónos, 2005; Sheorey & Mokhtari, 2001) or reading ability as measured by a reading comprehension test (Barnett, 1988; Madhumathi & Ghosh, 2012; Saeedeh, 2013). However, Alsamadani's (2009) and Mónos' (2005) studies have revealed that perceived use of reading strategies did not significantly correlate with reading ability, as measured by a reading comprehension test.

Reading strategies research in L2 has also shown that strategies can be taught effectively and that explicit reading strategies instruction tends to improve reading comprehension (Kern, 1989; Koda, 2005; Taylor, Stevens, & Asher, 2006). Consequently, the research proposes that strategy instruction should be an essential component of reading comprehension instruction (Anderson, 1999; Grabe, 2009). For language instructors seeking to integrate reading strategies into the language curriculum, identifying and understanding significant individual differences between learners' strategy usage is also essential to providing the most effective instruction possible (Oxford & Ehrman, 1992). Among the most salient individual factors—which include learning aptitude, gender, culture, age, affective variables, and other demographic variables (Ehrman, Leaver, & Oxford, 2003; Oxford & Ehrman, 1992)—learning styles help determine the manner and the way in which students learn a new language and are, therefore, considered a fundamental element in L2 instruction (Oxford, 2003).

A *style* is defined as "habitual patterns or preferred ways of doing something (e.g., thinking, learning, teaching, etc.) that are consistent over long periods of time and across many areas of activity" (Sternberg & Grigorenko, 2001, p. 2). More particularly, *learning styles*, which are relatively constant in an individual, refer to "the attitudes and behaviors which determine an

individual's preferred way of learning" (Honey & Mumford, 1995, p.1). By contrast, *learning strategies* are specific behaviors learned and developed to deal with tasks and situations (Cohen, 2003; Riding, 2001; Sternberg & Grigorenko, 2001). Sternberg and Grigorenko (2001) have stated that the main difference between style and strategy is in the level of consciousness, arguing that "[s]tyles operate without individual awareness, whereas strategies involve conscious choice of alternatives" (p. 3).

A number of L2 researchers have argued that learning styles are an influencing factor in strategy use (e.g., Cohen, 2003; Ehrman, Leaver, & Oxford, 2003; Ehrman & Oxford, 1990; Li & Qin, 2006) and in reading comprehension (e.g., Cesur & Fer, 2011; Jafari & Mahboudi, 2012; Williams, 2010). The findings of these studies suggest that learning styles can be related to reading strategy use as well (Anderson, 1991). However, only very few empirical studies have been carried out to investigate the relationship between reading strategy use and learning styles (Corbitt, 2013; Díaz & Diez, 2009; Shen, 2010; Tsai, 2012). Díaz and Diez (2009) proposed that pragmatist and reflexive styles influenced the frequency of reading strategy use of English learners at the university level. Shen (2010) found that perceptual learning style preferences affected L2 lexical inferencing of learners of English in higher education. Similarly, Tsai (2012) identified a high correlation between reading strategy use and learning styles of English learners at the university level. Corbitt (2013) identified a relationship between perceived global strategy and learning styles in a group of Spanish learners with learning disabilities. However, Corbitt's study did not reveal any relationship between learning styles and perceived use of strategies among the non-at-risk student group.

It can be concluded from the above literature review that there exists a need to conduct further research to gain insight into the nature and extent of the relationship between perceived use of reading strategies, reading comprehension, and learning styles in L2. Moreover, due to the great variation between language learners in terms of age, learning environment, the first language, L2, proficiency levels, etc., it is important to conduct such studies in different contexts. Consequently, the chief aim of this study is to investigate the extent to which reading comprehension and learning styles are related to perceived use of reading strategies in the context of two different educational environments, an Australian and a Turkish university, among students studying French at the intermediate level of proficiency. The study also aims to explore to what extent the Australian and Turkish subgroups differ in terms of perceived use of reading strategies and reading comprehension.

In order to achieve our objectives, the following research questions will be addressed:

1. To what extent do the Australian and the Turkish subgroups differ in terms of reading comprehension and perceived use of reading strategies?
2. To what extent is perceived use of reading strategies related to reading comprehension of Australian and Turkish learners of French?
3. To what extent does perceived use of reading strategies differ in terms of learning styles of Australian and Turkish learners of French?

Method

Context of the Study

We conducted this study in the context of two universities: Flinders University, a mid-size university in Adelaide, Australia, and Eskişehir Osmangazi University, also a mid-size university located in Eskişehir, Turkey.

At Flinders University language learning is not compulsory, and students may enroll in French as a one-semester elective. They may also enroll in a four-semester minor or a six-semester major as part of their bachelor's degree. The Flinders French program is relatively modest in Australian terms, as it caters to approximately 200 students in Semester 1 and 140 students in Semester 2 each year. The French curriculum is divided into three levels: *introductory* (in which about half of the students are enrolled each year), *intermediate*, and *advanced*. The intermediate level is subdivided into *intermediate* and *upper intermediate* sub-levels, from which the participants were recruited.

In the Department of Foreign Languages at Eskişehir Osmangazi University, the French program is offered to students who enroll in the Department of Comparative Literature and who choose French as a compulsory second foreign language. Approximately 100 students enroll in this program each year. It is structured very differently to the French program offered at Flinders. The French program at Eskişehir Osmangazi is an intensive preparatory language program, which starts at the introductory level and which aims for students to reach an intermediate level of proficiency by the end of the academic year. As students at the introductory level lack experience reading authentic texts in French, participants for this study were chosen from the intermediate level.

Participants

Ninety-one students in total, across both universities, participated in the study. Recruitment was carried out by verbal announcement in class, followed by the distribution of written material providing information about the purpose of the study and time commitment, as required by each university. The background questionnaire administered to the participants provided a range of demographic data summarized below.

At Eskişehir Osmangazi University, 63 students with intermediate level of proficiency participated in the study. The participant group was comprised of 47 women and 16 men. The age of the participants ranged from 18 to 25 years of age, with an average age of 20.0 years old. At Flinders University, 29 students participated in the study. However, as one participant chose not to answer the questionnaires but completed the test, the number of participants was reduced to 28. Given the small size of the intermediate French program at Flinders University, it was not possible to match the number of Turkish participants. The Australian respondents were drawn from the intermediate and upper intermediate cohort of students. The group was comprised of 18 women and 10 men. The average age of the group was 23.8 years old, the youngest respondent being 18 and the oldest, 60.

The Turkish participants were enrolled in a Bachelor's degree in Comparative Literature. They had studied at least two semesters of French, and some had studied as many as four semesters. With the exception of two participants, all had started French upon entering the university. In addition, the Turkish students had studied English, and some had been exposed to German, Arabic, Italian, Azerbaijani, and Kurdish. None of the participants had travelled to France or to a French-speaking country. The vast majority had a very positive attitude towards reading in French, with an average score of 4.30 out of 5, as determined by the background questionnaire (see next section for details). The large majority of respondents (86%) reported that the most salient obstacle to reading was the difficulty posed by vocabulary. Less than half the group (44%) reported reading in French in addition to their assigned reading. However, a few participants reported reading as much as 3 to 4 additional hours weekly (and up to 5 hours in one case). A large majority of Turkish students indicated that they were learning French to obtain certification (89%) and that they enjoyed language learning (83%). They also studied French because they wanted to have better career opportunities (65%), they liked French (37%), they wished to travel (37%), and they were interested in French literature (29%) and French culture (14%).

The Australian participants were enrolled in a variety of Bachelor degrees such as Languages, Archaeology, Creative Arts, International Studies, Law and Media, Biomedical Science, and Education. The length of their French studies was variable, more so than that for the Turkish subgroup, ranging from 1 to 12 semesters (in one case). This discrepancy may be due to some participants being granted direct entry into the second year language program because of their prior knowledge of French. Furthermore, others may have included previous studies of French prior to enrolment at Flinders University (e.g., at school or at the Alliance Française). Students at this level of the Flinders French program should normally have studied French between 3 and 5 semesters. Besides French, most of the participants had been exposed to another language, whether it was an L2—such as Italian, Chinese, German, Japanese, and Indonesian—or a community language spoken at home—such as Filipino, Swahili, and Arabic. Nearly two thirds of the Australian participants had travelled to a French speaking country (mostly France). As was the case for the Turkish subgroup, the Australian subgroup was mostly positive in relation to the importance of reading, with an average score of 4.50 out of 5. Most students (82%) also identified vocabulary as the major difficulty impeding their ability to read in French. Most Australian respondents (75%) reported reading in French in addition to their assigned readings, the majority reading between one and two extra hours. They cited the Internet as a common source for reading practice in French. In terms of their motivation to learn French, the Australian students said they were both intrinsically and extrinsically motivated, as most of them declared that they enjoyed language learning (82%), that they were learning French in order to travel (75%), and that they were interested in French culture (71%). They also associated French with their certification (61%) and career opportunities (54%) and they indicated that they enjoyed French (50%) and were interested in French literature (46%).

In spite of differences between the Australian and Turkish subgroups in terms of educational context, study pathways, and exposure to French, both subgroups globally displayed common characteristics in relation to how they perceived their language and reading proficiency (positively), what caused reading difficulty (vocabulary), and what motivated them to study French (careers, desire for language learning). The vast majority rated the importance of reading very high, in relation to learning French.

Surveys and Data Collection Procedure

As Eskişehir Osmangazi and Flinders universities are located in different hemispheres, they follow a different academic schedule. The data was collected in May 2013 in Turkey and in October 2013 in Australia. This enabled participants to reach a similar point in the academic year. By collecting data at the end of the academic year, we hoped that the impact of the data collection on the participants' program of study would be minimal.

The participants were drawn from classes taught by our colleagues or ourselves. They were briefed on the aims of the investigation and were informed of the data collection procedure. Participation in the study was voluntary and anonymous.

The survey instruments consisted of three questionnaires and one reading test, which were administered in two separate sessions. In the first session, the participants completed a 10-minute background questionnaire, a 10-minute language learning style inventory, and a 10-minute survey of reading strategies. In the second session, the participants took a 45-minute reading comprehension test in French.

A more exhaustive description of the data collection instruments is provided below.

Background Questionnaire

The background questionnaire aimed to collect demographic information such as age, gender, degree and major, courses studied at school, languages learned, and experience studying French. It also strove to gather data on the participants' global perceived proficiency in their L2 languages and, in particular, their global perceived reading proficiency in these languages. Furthermore, the questionnaire collected information about the participants' motivation for studying French, the participants' opinion of the importance of reading as part of the language curriculum, and the participants' experience of reading in French. The background questionnaire included 20 questions.

The Survey of Reading Strategies

The Survey of Reading Strategies (SORS) was originally developed as a tool for measuring adolescent and adult non-native English speakers' metacognitive awareness and perceived use of reading strategies while reading academic or school-related materials (Mokhtari & Sheorey, 2002). The SORS has also been widely used in relation to speakers or learners of other languages (e.g., Alhaqbani & Riazi, 2012; Alsheikh, 2011). Therefore, its use was found to be suitable in the context of the present study to elicit data on Turkish and Australian participants' perceptions of their reading strategy behavior. The SORS comprises 30 items involving a 5-point Likert scale ranging from 1 (*I never or almost never do this*) to 5 (*I always or almost always do this*). The SORS was adapted for this study by replacing the word "English" with the word "French".

The Australian participants completed the original English version of SORS; however, the Turkish participants completed a translated version (adapted by Mendi, 2009). Mendi (2009)

established the internal reliability coefficient of the Turkish version at .87, following a study of 334 students learning English in a preparatory program in higher education.

Although the alpha indices of the current study (.68 for the Australian subgroup, .80 for the Turkish subgroup, and .77 for all participants) are lower than those for the original version of the SORS given by Mokhtari and Sheorey (2002), the indices are deemed acceptable for the Australian subgroup, satisfactory for the Turkish subgroup, and satisfactory for all participants.

Kolb Learning Style Inventory v.3.1

Kolb Learning Style Inventory Version 3.1 (KLSI 3.1) was used to assess the participants' learning styles. KLSI 3.1 is a revision of the Learning Style Inventory developed by David A. Kolb, who based his learning style model on *experiential learning theory*, which provides a holistic view of the learning process, and has been used frequently for curriculum design (Biggs, 2001; Kolb, Boyatzis, & Mainemelis, 2001; Kolb & Kolb, 2005). Although various learning style models exist, we chose Kolb's model—originally intended primarily for school settings (Sternberg & Grigorenko, 2001) and designed for teens and adults—due to its particularly influential status as a model in research (Biggs, 2001; Kolb & Kolb, 2005).

The KLSI 3.1 is a 12-item questionnaire having a forced-choice format. Respondents are asked to rank four choices with "4 = *most like you*," "3 = *second most like you*," "2 = *third most like you*," and "1 = *least like you*." A sample question is "I learn best when," and the answer choices are "I listen and watch carefully," "I rely on logical thinking," "I trust my hunches and feelings," and "I work hard to get things done" (Li, Mobley, & Kelly, 2013, p. 39).

Each of four sentence endings corresponds to one of the four learning modes: concrete experience (CE), abstract conceptualization (AC), reflective observation (RO), and active experimentation (AE). The dimension of CE (feeling) and AC (thinking) is related to "grasping experience", and the dimension of RO (watching) and AE (doing) is related to "transforming or processing the experience" (Kolb, 1984; Kolb, Boyatzis, & Mainemelis, 2001, p. 228).

In each learning situation the learner has two choices as to how new information is perceived and how the experience is transformed or processed. Therefore, learning styles result from individual choices in each bipolar dimension (Kolb, Boyatzis, & Mainemelis, 2001). The KLSI 3.1 measures a learner's relative emphasis of each learning modes and assigns two combination scores that indicate a person's preference for abstractness over concreteness (AC-CE) and action over reflection (AE-RO) (Kolb & Kolb, 2005). Kolb and Kolb suggest that "[t]he four basic learning style types—Accommodating, Diverging, Assimilating, and Converging—are created by dividing the AC-CE and AE-RO scores at the fiftieth percentile of the total norm group and plotting the value on the Learning Style Type Grid" (p.14). [1]

Although the Turkish version of Learning Style Inventory adapted by Aşkar and Akkoyunlu (1993) was used in a number of studies in Turkey (e.g., Güven, 2004; Güven & Kürüm, 2007;

[1] As dominant learning abilities, an individual with an accommodating style has AC and AE; an individual with diverging style has CE and RO; an individual with assimilating style has AC and RO; an individual with converging style has AC and AE (Kolb & Kolb, 2005).

Oktar-Ergür, 2010), the KLSI 3.1[2] was found to be more suitable to the present study because of its higher reliability coefficients (the alpha coefficients averages are above .70) across a number of different populations (Kolb & Kolb, 2005). Consequently, permission to translate the KLSI 3.1 into Turkish and use it for the purpose of this study was sought and obtained from the test's distributor.[3]

Table 1 presents the alpha coefficients for the English version and translated version of KLSI 3.1 as determined for the present study.

Table 1. *Cronbach's alpha for each category of KLSI 3.1 in the present study*

	Alpha	
The categories of KLSI 3.1	English version (*n*=26)	Translated version (*n*=62)
Abstract conceptualization	.74	.63
Active experimentation	.67	.82
Concrete experience	.73	.80
Reflective observation	.77	.78
Average	.73	.76

Note. In data analysis related to learning styles, 26 Australian and of 62 Turkish participants were included as three participants had missing data in their KLSI 3.1. responses.

As shown in Table 1, the coefficient for the Turkish version of KLSI 3.1 was determined to average .76, ranging from .63 to .82, and the coefficient for the English version was determined to average .73, ranging from .67 to .77.

Reading Comprehension Test

We used a reading comprehension test validated by Özkan Gürses (2011) by consulting five academics from the Department of French Teaching at Anadolu University.[4] The test was also piloted in the same department and subsequently revised. The *KR20* reliability coefficient of the test used in the pilot study was calculated at .80 (Özkan Gürses, 2011).

The original reading comprehension test was comprised of 33 questions and featured six texts selected from different genres (novel, short story, autobiography, article) representing different types of textual sequence according to Adam's (1997) classification (namely narrative, descriptive, explicative, argumentative, and dialogical). All texts were originally authentic. However, it must be pointed out that the literary extracts were slightly modified to eliminate a small number of complex grammatical structures deemed unfamiliar to intermediate-level learners. The average length of the texts was approximately 250 words (ranging from 139 words

[2] It should be noted that since the study was carried out, a new version of Kolb's Learning Style Inventory has been released (KLSI 4).

[3] The KLSI 3.1 was translated into Turkish by Meral Özkan Gürses and colleagues at the Eskişehir Osmangazi University. The translated version was then back-translated into English independently for verification. The Turkish translation was tested by a sample of 32 respondents who took part in a pilot study to verify the Turkish version of the Learning Style Inventory.

[4] The academics were asked to evaluate 18 texts independently, out of which texts were selected. For these six texts, 76 questions were written, from which 65 questions were selected. As a result of the pilot study, the reading test comprised 33 questions with an item discrimination value above 0.30.

to 365 words). The questions were designed to measure the learners' reading sub-skills (Özkan Gürses, 2011).[5]

We felt that a six-text reading test would be excessive and might induce fatigue among the participants. As a result, the decision was made to reduce the test to four texts and 20 questions. Questions deemed ambiguous were eliminated.

In the current study, the *KR20* coefficient for the four-text reading test was determined to be .65, which is lower than the *KR20* coefficient calculated for the original six-text reading test (.80). The lower value of reliability of the four-text reading test could be related to the reduction in the number of comprehension questions. As a satisfactory level of reliability depends on the purpose of the instrument, researchers have proposed different criteria to assess the reliability of an instrument. For the use of research studies, a reliability coefficient of .60 or greater is considered acceptable (Shur & Shay, 2009; Springer, 2008). Therefore, although the reliability level of the reading test used in the present study was not ideal, it was deemed acceptable.

Data Analysis Procedure

Using SPSS 22, we calculated descriptive and inferential statistics to obtain information about participants' characteristics. The difference between the Australian and the Turkish subgroups in terms of reading comprehension and perceived use of reading strategies was examined through the use of the *t* test and the chi-square test. The Pearson product-moment correlation was run to investigate the relationship between reading comprehension and perceived use of reading strategies. The significance level was set at $p < .05$. We carried out two *t* tests and three Pearson product-moment correlations and applied the Bonferroni adjustment formula to control for Type I error by dividing the *p* value of .05 by the number of *t* tests and correlations. Given that reliability coefficients of data collection instruments in this study were not ideal, observed correlation coefficients were adjusted using the correction for attenuation formula. Effect sizes were calculated using Cohen's *d* formula ($d = 2t/\sqrt{(df)}$ to examine the extent to which the SORS score means differ in regards to learning styles; *d* and *r* values were interpreted according to the effect sizes for small ($d = .40$, $r = .25$), medium ($d = .70$, $r = .40$), and large ($d = 1.00$, $r = .60$), proposed by Plonsky and Oswald (2014) as a field-specific and empirically-based scale for language learning.

Before running the parametric tests, we confirmed that the data met the normality assumption. Shapiro-Wilk test *p*-values, skewness and kurtosis *z*-values, as well as histograms, were investigated to ascertain that the continuous variables (reading comprehension test scores and the SORS scores) were normally distributed for all participants. We also verified that the SORS scores were normally distributed for each category of independent variables: learning styles and nationality. Although the data was not distributed perfectly for each variable, the assumption of normality was not violated. Neither was an abnormality observed in the histograms.

[5] The sub-skills are as follows: (a) to notice text type and the author's objective, (b) to understand main subject and sub-subjects, (c) to understand the main idea and supporting ideas, (d) to understand the explicit and implicit information, and (e) to infer unfamiliar words from the context.

Results

The Difference between the Australian and the Turkish Subgroups in terms of Perceived Use of Reading Strategies and Reading Comprehension

Table 2 presents descriptive statistics for the SORS and the reading comprehension test scores of the Australian and the Turkish subgroups.

Table 2. *Descriptive statistics for the SORS and the reading test scores by nationality*

Groups	Frequencies and percentages for each level of strategy use			SORS scores				Reading comprehension test scores			
	n	High	Moderate	*M*	*SD*	Min	Max	*M*	*SD*	Min	Max
Australian subgroup	28	15 54%	13 46%	3.48	0.31	2.87	4.20	14.21	2.71	9	19
Turkish subgroup	63	42 67%	21 33%	3.63	0.41	2.63	4.43	9.94	2.54	5	17
All participants	91	57 63%	34 37%	3.59	0.39	2.63	4.43	11.25	3.25	5	19

As shown in Table 2, both Australian and Turkish participants reported moderate to high levels of strategy use according to the scale[6] adapted for this study. In other words, concerning overall perceived use of reading strategies, none of the participants fell in the low range of strategy use. Moreover, the frequencies of each level of strategy use did not differ significantly between the Australian and the Turkish subgroups, $\chi^2(1, N = 91) = 1.42$, $p = .23$. Therefore, it can be suggested that both subgroups displayed similar patterns in terms of strategy use level.

In Table 2, although it must be noted that the SORS means of the Australian subgroup were slightly lower than those of the Turkish subgroup, there did not appear to be a significant difference between the two subgroups, $t(89) = -1.70$, $p = .09$. However, the subgroups differed significantly in terms of reading comprehension test scores, $t(89) = 7.26$, $p < .001$, at the .025 significance level set by using the Bonferroni adjustment formula (.05/2 = .025) to control Type I error. The differences between the two subgroups represented a very small sized effect ($r = .18$) in terms of perceived use of reading strategies and a large sized effect ($r = .61$) in terms of reading comprehension.

Based on these findings, we can conclude that although the reading comprehension levels differed significantly between the two subgroups, there were only slight differences between the groups' perceived use of reading strategies.

Relationship between Perceived Use of Reading Strategies and Reading Comprehension

In Table 3, Pearson's correlation coefficients regarding the relationship between reading

[6] For the interpretation of the SORS scores, three levels of reading strategy use are identified along the lines of Oxford and Burry-Stock (1995): High (mean of 3.5 or higher), moderate (mean of 2.5. to 3.4), low (mean of 2.4 or lower) (Mokhtari & Sheorey, 2002).

comprehension and perceived use of reading strategies were presented for all participants and the subgroups.

Table 3. *Correlations coefficients and 95% confidence intervals by nationality regarding relationship between reading comprehension and perceived use of reading strategies*

Groups	*n*	Observed correlations	95% Confidence intervals		*p*	Disattenuated correlations
			Lower	Upper		
Australian subgroup	28	-.24	-.56	.15	.21	-.36
Turkish subgroup	63	-.03	-.28	.22	.79	-.04
All participants	91	-.18	-.37	.03	.94	-.25

As shown in Table 3, negative correlations were found between perceived use of reading strategies and reading comprehension for all participants and the subgroups, although correlations were not statistically significant at the .017 significance level using the Bonferroni adjustment formula (.05/3 = .017) to control Type I error. The disattenuated correlations were found to be slightly higher than the observed correlations. The correlations represented a small negative relationship for the Australian subgroup and all participants; they were negligible for the Turkish group.

Relationship between Perceived Use of Reading Strategies and Learning Styles

Table 4 presents descriptive statistics about perceived use of reading strategies in relation to learning style categories and nationality.

Table 4. *Descriptive statistics about perceived use of reading strategies in relation to learning style categories and nationality.*

Groups	Learning style categories	*f*	%	The SORS statistics	
				M	*SD*
Australian subgroup	Accommodating	4	15.4	3.47	0.13
	Assimilating	12	46.1	3.37	0.30
	Converging	6	23.1	3.70	0.33
	Diverging	4	15.4	3.42	0.40
Turkish subgroup	Accommodating	9	14.5	3.71	0.26
	Assimilating	29	46.8	3.57	0.47
	Converging	14	22.6	3.76	0.32
	Diverging	10	16.1	3.62	0.42
All participants	Accommodating	13	14.8	3.64	0.25
	Assimilating	41	46.6	3.52	0.43
	Converging	20	22.7	3.74	0.31
	Diverging	14	15.9	3.56	0.41

As presented in Table 4, the Australian and the Turkish subgroups were very similar in terms of the percentages for each learning style. While the most frequent learning style in both subgroups

was the assimilating style (46.6%), the least frequent was the accommodating style (14.8%). Pearson's chi-square statistics also revealed that there was no significant difference between the Australian and Turkish subgroups' learning style percentages, $\chi^2(3, N = 88) = 0.02$, $p = .99$.

When further analyzing the SORS means in terms of learning styles, we observed, as shown in Table 4, that the descending order of the SORS means, (i.e. converging, accommodating, diverging, and assimilating) was the same for both the Australian and the Turkish subgroups, as well as for all participants. These findings indicated that Australian and Turkish learners of French had similar characteristics in their perceived use of reading strategies, as well as in their learning styles.

To examine the extent to which a difference exists between learning styles in terms of perceived use of reading strategies, Cohen's *d* effect sizes were calculated for each pair of comparisons. The effect sizes are presented in Table 5.

Table 5. *Effect sizes for each pair of comparisons of learning styles by nationality*

Comparison groups of learning styles	All participants	Australian subgroup	Turkish subgroup
Accommodating vs Assimilating	0.26	0.34	0.28
Accommodating vs Converging	-0.37	-0.91	-0.18
Accommodating vs Diverging	0.25	0.20	0.28
Assimilating vs Converging	-0.54	-1.05	-0.43
Assimilating vs Diverging	-0.09	-0.14	-0.09
Converging vs Diverging	0.52	0.85	0.42

As shown in Table 5, the SORS' mean differences between converging styles and assimilating and diverging styles represented a small effect size for all participants and the Turkish group. However, for the Australian group, the differences in SORS means between converging styles and the remaining three styles represented a medium to large effect size. The findings revealed that, even if the magnitude of the effect sizes varied in the subgroups, converging styles influenced perceived use of reading strategies in both subgroups.

Discussion

The main objective of this study was to investigate to what extent reading comprehension and learning styles were related to perceived use of reading strategies of Australian and Turkish learners of French.

As for the relationship between perceived use of reading strategies and reading comprehension, while no relationship was found for the Turkish subgroup, a small negative correlation was found for the Australian subgroup, and for all participants. However, correlation coefficients were not statistically significant. The findings indicating the absence of a significant correlation between the variables are consistent with those of Alsamadani's (2009) and Mónos' (2005) studies, but not consistent with those of Barnett's (1988), Madhumathi and Ghosh's (2012), and Saeedeh's (2013) studies where the researchers found a positive and significant relationship between perceived use of reading strategies and reading proficiency. In Barnett's study, in which

participants were learners of French, the correlations between reading comprehension, strategy use, and perceived use of strategies were significant, except for the correlation between background knowledge and perceived use of reading strategies. Madhumathi and Ghosh's study revealed that perceived use of reading strategies moderately correlated with reading proficiency for Indian learners of English. Furthermore, Saeedeh found that reading strategy use was a weak predictor of reading comprehension for Iranian learners of English. In contrast with these findings, the absence of a positive relationship in the present study might be attributed to the participants' reporting high to moderate usage of reading strategies—possibly because of their rich language experiences—positively influencing their strategy use. Indeed, the vast majority of participants were exposed to at least one other language besides French and their first language. Similarly in Mónos' and Alsamadani's studies, the vast majority of participants fell in the moderate to high strategy usage category. Moreover, in Mónos' study, moderate readers recorded the highest means in the category of support, problem solving, and overall strategy use; however, moderate and excellent readers did not differ significantly in their strategy usage. These findings suggest that, contrary to expectations, learners in the high range of perceived usage of reading strategies did not necessarily obtain the highest reading comprehension scores.

The inconsistent results related to the relationship between perceived use of reading strategies and reading ability might also be attributed to the use of data collection instruments with different qualities and reliability values. This might have affected the nature and the extent of the relationship between the variables. For instance, as Mónos (2005) stated, the difficulty of a reading test might be the cause of students' poor performance in that reading test, even if students displayed high or moderate level of strategy use. In the present study, the level of reliability of the reading test and of the English version of the SORS, while not ideal, could influence the results, as correlations between the variables may be attenuated. Therefore, we suggest that there is a need for a reading test and a questionnaire of reading strategies to be developed for learners of French with higher psychometric qualities.

Another possible explanation for the absence of a positive relationship between these variables could be related to the difference between perceived and actual utilization of reading strategies. Perceived use of reading strategies might not necessarily translate into actual implementation of reading strategies (Mokhtari & Sheorey, 2002). In other words, learners might know which strategies to use, but they may not know how to use them effectively. As pointed out by Anderson (1991) and Carrell (1998), for successful reading to take place, it is not only necessary to know which strategies to use but also how to use them appropriately. In other words, it can be suggested that participants who scored in a high range for perceived usage of reading strategies might not necessarily have been efficient in their strategy use, and that their high level of perceived use of strategies might not be reflected in reading comprehension scores. Hence, it is important to use additional data collection procedures, such as think-aloud protocols of reading, to obtain more information about the actual utilization of strategies among students and to gain a better understanding of the nature of the relationship between reading comprehension and reading strategy use.

With regard to the relationship between perceived use of reading strategies and reading comprehension, another interesting result of the study was that findings were not consistent between the two subgroups. A negative and small correlation for the Australian subgroup and for

all participants was found; however, there did not appear to be a correlation for the Turkish subgroup. The difference in the findings for the two groups could be attributed to the significant variation between learners in L2 context, as well as to the complexity of reading and the nature of the relationship between reading comprehension and strategy use, which is not straightforward and simple, as argued by Carrell (1998). Indeed, the existence of other factors could influence to a varying degree reading comprehension and perceived use of reading strategies, as well as their relationship. In this study, while the Australian group scored higher means in the reading comprehension test, the Turkish group scored higher means in the SORS, though the difference between the SORS means was not significant and represented a very small effect. It can be suggested that differences between the two educational settings (e.g. participants' linguistic and educational background, educational context, and curriculum) could account for larger variability in reading comprehension than in perceived use of reading strategies. The important difference in reading comprehension might also be due to the considerable linguistic and cultural distance experienced by the Turkish learners in relation to the French language and culture, compared with the closer linguistic and cultural proximity experienced by Australian learners who spoke English as a first language and had traveled to a French-speaking country. Therefore, the Turkish learners might have had more difficulty reading in French. Perhaps because of this fact, they did not perform as well in the reading comprehension test and felt compelled to use strategies more frequently while reading. In another comparative study, the use of reading strategies of Turkish and Iranian learners of English differed significantly (with a large effect size) in favor of Turkish learners (Kasimi, 2010). These findings suggest that the first language might influence perceived use of reading strategies. However, there is still a need for more studies of this type, as there are few comparative studies examining strategy use of learners with different first languages.

As for the relationship between strategy use and learning styles of Australian and Turkish learners of French, the findings suggest that learning styles influenced the perceived use of reading strategies. These findings are consistent with those of Díaz and Diez (2009), Shen (2010), and Tsai (2012); however, they are not consistent with Corbitt's (2013) study that found a relationship between learning styles and perceived use of strategies for a group of students of Spanish with learning disabilities but not for the non-at-risk student group.

The findings also revealed that both subgroups displayed fairly similar characteristics in terms of learning styles and their influence on strategy use. While the SORS means of learners with converging styles were the highest, the SORS means of learners with assimilating styles were the lowest for both subgroups and for all participants. Learners with both styles preferred to apprehend the information by *abstract conceptualization*. However, learners with converging styles preferred to transform information through *active experimentation,* while those with assimilating styles transformed information through *reflective observation.* Active experimentation was associated with *doing,* as opposed to reflective observation, associated with *reflecting* (Kolb & Kolb, 2005). It can be suggested that the preference for *doing* during learning might be the reason for the higher frequency of perceived use of reading strategies reported by learners with converging learning styles in both groups. The findings also revealed that the differences in the SORS means between converging styles and the remaining three styles represented a large effect size for the Australian subgroup. The results for the Turkish subgroup and for all participants indicate that, the participants with converging styles reported higher usage of strategies than those with assimilating and diverging styles, even when the effect sizes

were small. These findings are consistent with those of the study by Güven (2004) who found that participants with converging styles reported the highest usage of learning strategies.

Limitations

The results of the present study should be interpreted with caution in light of its methodological limitations. First, as it was conducted in two higher education contexts with relatively small French programs, and in two different countries, the researchers could only recruit two relatively small samples of participants. The small cell size did not permit the researchers to use statistical tests to investigate the effects of several factors on the variables in question. For example, we could not examine the influence of linguistic background or the number of years of French study on strategy use and reading comprehension. Secondly, all participants fell in the moderate to high strategy use category. The absence of participants in the low range of strategy use could have affected our results. Thirdly, our study was limited to perceived use of reading strategies; actual use of reading strategies might not have been affected to the same extent. Fourthly, we included only participants with an intermediate level of proficiency. Therefore, we do not know the extent of the influence of proficiency in relation to the variables investigated. Finally, the results could have been affected by less than ideal reliability coefficients of the reading comprehension test and the English version of the SORS used in the present study.

Conclusion

In sum, a small negative relationship was found between reading comprehension and perceived use of reading strategies for all participants and for the Australian subgroup; there appeared to be no correlation for the Turkish group. Regarding the relationship between learning styles and strategy use, the study suggests that converging styles influenced perceived use of reading strategies in both subgroups. Furthermore, while an important difference was found between the two subgroups in terms of reading comprehension, the subgroups differed slightly in their perceived use of reading strategies. It also appears that the two groups have fairly similar patterns of learning styles. The influence of learning styles on strategy use is similar, as well. The findings suggest that cultural, linguistic, and contextual differences between the two groups could account for larger variability in reading comprehension than in strategy use or in learning styles.

However, due to the study's limitations, we suggest comparative large-scale studies with more even samples (in terms of size and levels of proficiency) to investigate the relationship among learning styles, reading strategies, and reading comprehension in L2, by taking into account the influence of other individual and contextual factors. These studies could include participants in the lower range of strategy usage in order to target that particular group.

The results of such investigations are important, as they contribute to furthering the knowledge of the characteristics and conditions of reading strategy usage and of reading in L2. Furthermore, by investigating individual differences in reading, the findings contribute towards a better understanding of the strategic reader's characteristics, thus enhancing the effectiveness of

reading strategy and reading comprehension instruction.

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Appendix A

Survey of Reading Strategies (SORS) (Adapted from Mokhtari & Sheorey, 2002)

The purpose of this survey is to collect information about the various techniques you use **when you read academic materials in French** (e.g., reading textbooks for homework or examinations, reading journal articles, etc.).
All the items below refer to your reading of **college-related academic materials in French (such as textbooks, not newspapers or magazines)**. Each statement is followed by five numbers, 1, 2, 3, 4, and 5 each number means the following:
'1' means that '**I never** or **almost never** do this'.
'2' means that 'I do this **only occasionally'.**
'3' means that 'I **sometimes** do this'.
'4' means that 'I **usually** do this'.

‘5’ means that 'I **always** or **almost always** do this'.

After reading each statement carefully, **circle the number** (1, 2, 3, 4, or 5) which applies to you. Note that there are **no right or wrong responses** to any of the items on this survey.

Item No	Reading Strategies	Never	Occasionally	Sometimes	Usually	Always
1	I have a purpose in mind when I read.	1	2	3	4	5
2	I take notes while reading to help me understand what I read.	1	2	3	4	5
3	I think about what I know to help me understand what I read.	1	2	3	4	5
4	I take an overall view of the text to see what it is about before reading it.	1	2	3	4	5
5	When text becomes difficult, I read aloud to help me understand what I read.	1	2	3	4	5
6	I think about whether the content of the text fits my reading purpose.	1	2	3	4	5
7	I read slowly and carefully to make sure I understand what I am reading.	1	2	3	4	5
8	I review the text first by noting its characteristics like length and organization.	1	2	3	4	5
9	I try to get back on track when I lose concentration.	1	2	3	4	5
10	I underline or circle information in the text to help me remember it.	1	2	3	4	5
11	I adjust my reading speed according to what I am reading.	1	2	3	4	5
12	When reading, I decide what to read closely and what to ignore.	1	2	3	4	5
13	I use reference materials (e.g., a dictionary) to help me understand what I read.	1	2	3	4	5
14	When text becomes difficult, I pay closer attention to what I am reading.	1	2	3	4	5
15	I use tables, figures, and pictures in text to increase my understanding.	1	2	3	4	5
16	I stop from time to time and think about what I am reading.	1	2	3	4	5
17	I use context clues to help me better understand what I am reading.	1	2	3	4	5
18	I paraphrase (restate ideas in my own words) to better understand what I read.	1	2	3	4	5
19	I try to picture or visualize information to help remember	1	2	3	4	5

	what I read.					
20	I use typographical features like bold face and italics to identify key information.	1	2	3	4	5
21	I critically analyze and evaluate the information presented in the text.	1	2	3	4	5
22	I go back and forth in the text to find relationships among ideas in it.	1	2	3	4	5
23	I check my understanding when I come across new information.	1	2	3	4	5
24	I try to guess what the content of the text is about when I read.	1	2	3	4	5
25	When text becomes difficult, I re-read to increase my understanding.	1	2	3	4	5
26	I ask myself questions I like to have answered in the text.	1	2	3	4	5
27	I check to see if my guesses about the text are right or wrong.	1	2	3	4	5
28	When I read, I guess the meaning of the unknown words or phrases.	1	2	3	4	5
29	When reading, I translate from French into my native language.	1	2	3	4	5
30	When reading, I think about information in both French and my mother tongue.	1	2	3	4	5

Appendix B

Turkish version of Survey of Reading Strategies (SORS) (Adapted from Mendi, 2009)

Yabancı Dil Okuma Stratejileri Ölçeği

Bu ölçeğin amacı **akademik amaçlı Fransızca bir metin okurken (ödev için metin okuma, makale okuma, vb.)** kullandığınız stratejilerle ilgili bilgi edinmektir. Aşağıdaki tüm maddeler Fransızca **akademik** materyal okumakla ilgilidir (**gazete ya da dergi okumakla ilgili değil).** Hiçbir madde için doğru ya da yanlış cevap yoktur. Ölçekten elde ettiğiniz puan ders notlarınızı hiçbir şekilde etkilemeyecektir. Lütfen ifadeleri dikkatlice okuyup size uygun olanı işaretleyiniz.

‘1’ : **Hiçbir zaman** ya da **neredeyse hiçbir zaman** bunu yapmam.
‘2’ : **Ara sıra** bunu yaparım.
‘3’ : **Bazen** bunu yaparım.
‘4’ : **Genellikle** bunu yaparım.
‘5’ : **Her zaman** ya da **hemen hemen her zaman** bunu yaparım.

Madde No	Okuma Stratejileri	Hiçbir zaman	Ara sıra	Bazen	Genellikle	Her zaman
1	Belli bir amaca göre okurum.	1	2	3	4	5
2	Okurken anlamama yardımcı olması için not alırım.	1	2	3	4	5
3	Okurken anlamama yardımcı olması için konuyla ilgili ne bildiğimi düşünürüm.	1	2	3	4	5
4	Okumaya başlamadan önce konuyu anlamak için metne genel olarak göz atarım.	1	2	3	4	5
5	Metin zorlaştıkça okuduğumu daha iyi anlamak için metni sesli okurum.	1	2	3	4	5
6	Okuma amacıma uygun olup olmadığını anlamak için metnin içeriğine bakarım.	1	2	3	4	5
7	Okurken anladığımdan emin olmak için yavaşlar ve daha dikkatli okurum.	1	2	3	4	5
8	Metni okumaya başlamadan önce metnin uzunluğuna ve organizasyonuna göz atarım.	1	2	3	4	5
9	Dikkatimi kaybettiğimde okuma işlemine geri dönüp dikkatimi toplamaya çalışırım.	1	2	3	4	5
10	Okuduğum bilgiyi hatırlamak için metinde ilgili kısımların altını çizerim.	1	2	3	4	5
11	Okuduğum metnin türüne göre okuma hızımı ayarlarım.	1	2	3	4	5
12	Okurken neyi daha dikkatli okuyacağıma neyi önemsemeyeceğime karar veririm.	1	2	3	4	5
13	Okurken sözlük gibi kaynaklara başvururum.	1	2	3	4	5
14	Metin zorlaştıkça metni daha dikkatli okumaya başlarım.	1	2	3	4	5
15	Okuduğumu daha iyi anlayabilmek için metindeki tablo, şekil ve resimlerden faydalanırım.	1	2	3	4	5
16	Zaman zaman durup okuduğum konu hakkında düşünürüm.	1	2	3	4	5
17	Okuduğumu daha iyi anlamama yardımcı olması için konuyla ilgili ipuçlarını (resim, alt başlık, tekrarlanan kelimeler vb.) kullanırım.	1	2	3	4	5

18	Okuduğumu daha iyi anlayabilmek için okuduklarımı kendi kelimelerimle yeniden ifade ederim.	1	2	3	4	5
19	Okuduğumu hatırlamama yardımcı olması için okuduğum noktayı kafamda canlandırmaya çalışırım.	1	2	3	4	5
20	Önemli noktaları anlayabilmek için koyu (**bold**) ya da eğik (*italic*) yazılış gibi yazım özelliklerine dikkat ederim.	1	2	3	4	5
21	Metindeki bilgiyi eleştirel biçimde analiz eder, değerlendiririm.	1	2	3	4	5
22	Metindeki fikirler arasındaki ilişkileri bulabilmek için okurken ara ara daha önce okuduklarıma geri dönerim.	1	2	3	4	5
23	Yeni bir bilgiyle karşılaştığımda anlayıp anlamadığımı kontrol ederim.	1	2	3	4	5
24	Okurken metnin içeriğini tahmin etmeye çalışırım.	1	2	3	4	5
25	Metin zorlaştıkça daha iyi anlamak için metni yeniden okurum.	1	2	3	4	5
26	Okurken kendime metinde cevaplanmasını istediğim sorular sorarım.	1	2	3	4	5
27	Metinle ilgili tahminlerde bulunur, okurken doğru mu değil mi bakarım.	1	2	3	4	5
28	Okurken anlamını bilmediğim kelime ya da kelime gruplarının anlamlarını tahmin etmeye çalışırım.	1	2	3	4	5
29	Okurken Fransızcadan Türkçeye çeviri yaparım.	1	2	3	4	5
30	Okurken metindeki bilgi hakkında hem Fransızca hem Türkçe düşünürüm.	1	2	3	4	5

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