



A Comparative Study of Factors Contributing to Reading Comprehension in L2 (English) Among Iranian and Indian Students

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ARTICLE INFO	ABSTRACT
<p>Received: 1 January 2020 Revised: 22 January 2020 Accepted: 24 January 2020 Online: 21 February 2020</p>	<p>Few studies have ever been conducted to find out degree of contribution of L1 reading ability and L2 general linguistic proficiency to L2 reading regarding the context of learning. Two groups of students from the Indian ESL (English as a Second Language) and Iranian English as a Foreign Language (EFL) contexts attended this study. Measures of general English proficiency (GEP), reading comprehension (RC) in L2 and reading strategy awareness (RSA) in L1 were administered among the participants. Findings showed that RSA accounted for 41% and 10% of variance in L2 RC for the Iranian and Indian groups, respectively. It was also found regression weight for RSA is still significant for the Iranian group but not for the Indian group. In addition, for the Iranian group, both RSA and GEP are significant variables in prediction of RC in L2 but for the Indian group only GEP contributed significantly to the prediction of RC in L2. In addition, for both the high and low Iranian GEP groups only the contribution of RSA was significant in the prediction of RC in L2. However, for the Indian group the role of RSA was insignificant in predicting RC in L2, for both high and low groups. As the differences of the findings are more than the similarities in the two contexts, it is suggested that reading teachers reconsider the significant role of factors that contribute more to L2 reading, regarding the moderating role that context of learning plays in this regard.</p>
<p>KEYWORDS</p> <p>L1 reading L2 reading L2 proficiency EFL context ESL context</p>	

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1. Introduction

Reading is an important skill for academic purposes and for language learning. Therefore, reading courses aim to help readers to improve their understanding or comprehension of text (Cain & Oakhill, 2007; Ouellette, 2006). Cognitive skills interact with knowledge sources to result in reading comprehension (Grabe, 2009; Koda, 2005). One of the knowledge sources is reading strategies. As mentioned by Grabe (2009, p. 221) reading strategies are “processes that are consciously controlled by readers to solve reading problems.” Reading strategies, according to Lenski and Nierstheimer (2002) are cognitive tools that readers use to construct meaning from text. When the text becomes more difficult, readers use more of reading strategies to comprehend it (Pressley & Afflerbach, 1995). Reading research shows that skilled readers use strategies flexibly (Pressley, 1995), are active while reading, set goals for reading, and are highly aware of and use reading strategies (e.g., Erler & Finkbeiner, 2007; Sheorey & Mokhtari, 2001). Successful reading comprehension, according to Trehearne & Doctorow (2005) is an interaction between different variables (i.e., reader, text and environment). It depends on activating the existing background knowledge, lexical knowledge (Chuang, Joshi & Dixon, 2012), knowledge of grammar and syntax, metacognitive awareness, use of cognitive reading strategies, etc. (Koda, 2007). Struggling readers typically use fewer strategies and their strategy use is not flexible. Therefore, flexible use of strategies is a prime characteristic of effective readers and should be an instructional goal for every reading teacher (Lenski & Nierstheimer, 2002).

To explain relationship between languages in mind, Cummins (1979) introduced linguistic interdependence hypothesis (LIH) according to which proficiencies in cognitively demanding tasks, such as literacy skills, abstract thinking and content learning, are common across languages and transfer from one language to another. To test this hypothesis studies were conducted showing that students’ L1 and L2 reading comprehension ability is weakly

(Proctor, August, Carlo, & Snow, 2006) to moderately (Baker, Stoolmiller, Good & Baker, 2011; Manis, Lindsey, & Bailey, 2004) related. According to LIH for successful transfer of language skills from L1 to L2 to happen, sufficient exposure to the L2 and motivation to learn L2 are required (Cummins, 1981). However, LIH was criticized for oversimplifying the relationship between L1 and L2 as it fails to consider a broad range of factors that moderate the L1-L2 relations (e.g., Prevoo, Malda, Emmen, Yeniad, & Mesman, 2015; Proctor, August, Snow, & Barr, 2010; Verhoeven, 1994). Therefore, Linguistic Threshold Hypothesis Cummins' (1979) was introduced according to which literacy skills and concept transfer from L1 to L2 if a minimum level of linguistic proficiency in L2 is attained. However, as the relationship between L1 and L2 is so complex and it would be so simplistic to have an absolute definition of this relation, and in order to test the efficacy of LIH and LTH, the role that context of learning can play in providing a more comprehensive picture of this relationship is worth investigation. As most of the studies examining the relationship between L1 and L2 were conducted either in EFL or ESL contexts without comparing the two contexts, it is important to know if the reading behavior of students in L2 can be affected as a result of the possible interplay between the different aspects of the existing languages in their mind when the context of reading (EFL vs. ESL) is different. Therefore, this study will put to the test two well-known hypotheses about the relationship of languages in mind, namely the Linguistic Interdependence Hypothesis (LIH) and Linguistic Threshold Hypothesis (LTH) (Cummins, 1979) considering the moderating effect of context (EFL vs. ESL).

2. Literature review

2.1. Reading Comprehension and Strategy Instruction

Metacognitive reading strategy awareness as defined by scholars (e.g., Cook, 2001; Oxford, 1990) is any choice, behavior, thought, suggestion and technique that a reader uses to help their learning process. Reading research shows the importance of reading strategies in promoting reading comprehension (Koda, 2005). Strategy-based reading instruction has always been regarded as an important element in L1 reading (Pressley 2002). Following studies in metacognitive reading strategy instruction in L1 (e.g. Brown & Palincsar, 1982; Palincsar & Brown, 1984), many studies were conducted in L2 research to examine the frequency and type of strategies that second language learners used in reading and the effects of reading strategy instruction on reading improvement (e.g., Carrell, Pharis & Liberto, 1989; Harris 2003; Janzen & Stoller, 1998; Jimenez, Garcia & Pearson, 1996; Zhang 2001). Carrell et al. (1989) by employing an experimental design found that metacognitive strategy instruction boosted the experimental group's reading comprehension in L2. According to studies (e.g., Garner, 1987; Swanson & Alexander, 1997) reading difficulty is mainly a result of cognitive and metacognitive inefficiencies. Among these, higher order cognitive skills are more prone to cross-language transfer (Kim & Piper, 2018). EFL teachers, according to Taki (2016) should implement strategy instruction into their reading task to help students transfer strategies from L1 to L2.

2.2. The relationship between L1 reading and L2 reading

Two hypotheses are widely known about the relationship between L1 and L2 reading ability, namely the linguistic interdependence hypothesis and the linguistic threshold hypothesis. Simply put, the linguistic interdependence hypothesis proposes that L1 reading ability

transfers to L2 as there is a common underlying cognitive ability between L1 and L2, freeing us from relearning them in one language if they exist in the other (Pae, 2018). According to the linguistic threshold hypothesis a threshold or minimum level of L2 language ability or proficiency is necessary before L1 reading ability transfers to L2 (Cummins, 1979). Alderson (1984) integrated the two afore-mentioned hypotheses into a question by asking if the source of problem in foreign language reading is a language problem (referring to a weakness in the knowledge and skills required for processing L2 linguistic properties, such as orthographic, phonological, lexical, syntactic, and discursal knowledge specific to L2) or a reading problem (referring to a weakness in what is called higher level mental operations such as predicting, analyzing, synthesizing, inferencing, and retrieving relevant background knowledge, which are assumed to operate universally across languages.). By reviewing available research Alderson (1984) found that both language problem and reading problem can be the driving source of L2 reading problem; however, at the lower levels of L2 proficiency, as Alderson (1984) mentioned, L2 reading problem is more because of a language problem and at the higher levels of L2 proficiency it is more a reading problem. within

However, very few studies have considered the relative contribution of L1 reading ability and L2 proficiency on L2 reading performance in two different contexts, namely ESL and EFL. The answers to this question will contribute to our understanding the relationship between L1 and L2 reading when the learning context varies.

2.3. The Linguistic Threshold Hypothesis (LTH)

Clark (1979) originally used the term “short-circuit hypothesis” which is recently mostly referred to as the Linguistic Threshold Hypothesis (LTH) (Bernhardt & Kamil, 1995). For L2 learners in order to apply their reading skills in L1 to L2 reading a certain amount of control over L2 must be gained, or simply put, a critical linguistic threshold must be crossed. Klark (1979) calls this “certain amount” as a “language ceiling”, and Cummins (1979) calls it a

“threshold level of linguistic competence”, below which reading strategies in L1 are unlikely to be transferred to L2 reading and are therefore, short-circuited.

According to Bernhardt's compensatory model of reading (2000, 2005), 50% of L2 reading scores are explained by linguistic knowledge in L2 (e.g., grammar and vocabulary) and reading ability in L1 (e.g., knowledge of text structure). However, to find out which variable (i.e., L1 reading ability or L2 general proficiency) contribute more to L2 reading comprehension, many studies were conducted. Most researchers found a stronger relationship between L2 proficiency and L2 reading than between L1 and L2 reading (Bernhardt & Kamil, 1995; Morvay, 2015; Feinauer, Hall-Kenyon & Everson, 2017). Bernhardt and Kamil (1995) found that L1 reading accounts for 10% to 16% of the variances in L2 reading, whereas L2 proficiency accounts for 30% to 38%. Hacquebord (1989) also found that L2 proficiency accounts for as much as 55% of L2 reading ability.

Previous studies investigating the LTH (Cummins, 1979) generally assumed that strategies transfer from L1 to L2 reading, making L1 reading ability a stronger predictor of L2 reading performance for higher proficiency readers. According to Bernhardt (2005) strategic knowledge which requires readers to use cognitive and metacognitive reading comprehension strategies plays a critical role in compensatory processing. It encompasses the conscious cognitive and metacognitive mental actions that readers take to plan, repair, evaluate, and monitor their reading comprehension processes (Baker & Brown, 1984). Phakiti (2008) collected data from 561 Thai university EFL students. Two different tests were given for L2 reading, and a strategy questionnaire was used to measure cognitive and metacognitive strategy use. Using structural equation modeling, Phakiti found that cognitive and metacognitive strategies are highly intercorrelated, and that these strategies explained between 11% and 30% of L2 reading performance.

In an attempt to study the role of L2 proficiency, Clark (1979) used a cloze test and a miscue analysis to compare the L1 and L2 reading ability of 21 adult low-level Spanish ESL students. He compared one good and one poor L1 reader of equal L2 proficiency level and found the good L1 reader treated the L2 text the same way that the poor L1 reader did and concluded that this is due to L2 knowledge deficiency and suggested that for the transfer of L1 reading ability to L2 reading a certain amount of L2 control is required. Allen and colleagues (1988) carried out a study on English native speakers' reading four passages in French, German, or Spanish as part of their foreign language instruction and found an increase in reading comprehension scores based on the language proficiency level. They concluded that knowledge of more languages would result in higher comprehension scores. Studying on Turkish learners of Dutch, Bossers (1991) found out that though both L1 reading and L2 proficiency contributed significantly to L2 reading, L2 proficiency was more predictive of L2 reading than L1 reading ability and L1 reading ability was more significant when a relatively high level of L2 proficiency has been achieved.

Research has shown that both hypotheses (i.e., LIH and LTH) have some limitations. For example, August (2006) has stated that LIH does not, a) identify the cognitive mechanisms involved for transfer; b) elaborate on which L1 skills transfer to L2; and c) how the learners transfer. In addition, LTH does not specify what specifically the critical level of L2 proficiency might be (August, 2006) and that LTH does not apply to individuals with low L1 linguistic and conceptual knowledge in L1 available for transfer (August, 2006). However, the argument between the two hypotheses is not whether there is any transfer between the two languages or not, but rather when transfer actually occurs (Grabe, 2009).

2.4. Rational and Purpose of the Current Study

According to Cummins (1989) studies generally show a strong degree of cognitive/academic interdependence between languages. As Bernhardt (2005) mentioned in cross-linguistic transfer studies the question is not whether transfer occurs or not, but how much, under what conditions and in what contexts transfer is expected to happen. As most of the studies testing LIH and LTH were in EFL contexts, there is a dearth of research concerning the extent to which reading ability (i.e., metacognitive awareness of reading strategies) in L1 and general proficiency in L2 contribute to L2 reading comprehension in two different social, cultural, educational and linguistic EFL and ESL contexts among EFL Iranian and ESL Indian pre-university students. This study attempts to find out if Iranian and Indian university students' reading ability in L1 and general English proficiency in L2 would contribute similarly to reading comprehension. Therefore, the following questions and the related hypotheses are put forward:

Qs1 & 2: Is there any correlation between reading strategy awareness (RSA) in L1, General English proficiency (GEP) and reading comprehension (RC) in L2 for both the Iranian and Indian groups.

Q3: Do RSA and GEP predict performance on RC in L2 for Iranian and Indian learners of English similarly?

Q4: Do RSA in L1 and General English proficiency at two high and low levels contribute to L2 RC similarly for both the Iranian and Indian groups?

A null hypothesis has been formulated for each question.

3. Methodology

3.1. Participants

The ESL Indian participants of the current study who were aged between 16 to 18, were first year pre-university students (number=157) from pre-university colleges randomly selected, with Kannada as medium of instruction in the city of Mysore, India. The EFL Iranian participants of this study were pre-university students aged from 17 to 19 years. They had already passed the general English (as foreign language) courses as well as the Persian language (native language courses) from ages 12 to 17 of their secondary education. In the current study, both Iranian and Indian students had English as their compulsory courses. However, what makes them different is the context in which instruction is taking place. English in the Iranian and Indian contexts is regarded as EFL and ESL, respectively. Stern (1983) differentiated between foreign language (FL) and second language (SL) in terms of language functions, language environment, learning purposes and learning methods. According to him, FL is the language which is used outside the country for purposes of tourism, communication with native speakers, reading foreign journals etc., but SL refers to the language that is as important as mother tongue. However, the two terms can be distinguished according to language environment and language input.

For Iranian learners of English, use of English is mostly confined to the classroom context. Indian learners of English, especially in the context where this study was conducted, are experiencing a multilingual context in which a minimum of three languages (i.e., Kannada, Hindi, and English) coexist. It should also be mentioned that English is being learned as their second language. According to Nayar (1997) English, in the Indian context is not the native language, but is used extensively “as a medium of communication in a variety of domains like education, administration, and commerce” (p. 15). As Karbalaei and Golshan (2010) stated

although in the Iranian and Indian contexts the instructional approaches employed in teaching reading might be similar in some way, the Indian students have more access to educational materials in English and the medium of instruction in most of their courses is English.

3.2. Instruments

The following instruments were used:

3.2.1. Language proficiency test

In order to homogenize participants according to their general English proficiency level in the two contexts (India and Iran) Nelson test (series 400 B) of proficiency was distributed among the participants. The language proficiency test consisted of different sections including a multiple-choice cloze passage, vocabulary grammar and pronunciation. In order to have a reliable test of proficiency at the piloting stage for the Indian group the test was administered to 15 similar students. Its reliability through the K-R21 formula turned out to be 0.71. The same procedure was run for Iranian students. The test was piloted with ten students and the reliability of the test scores turned out to be 0.78 according to the KR-21 formula.

3.2.2. Test of reading comprehension in English

From the reading section of the Cambridge Preparation for the TOEFL Test (Gear, J, 1993. pp. 416-421) the test of reading comprehension in English was adopted. As determined at the piloting stage, the time allocated was thirty minutes. As readability of reading text which is calculated through reading difficulty formulas, is an objective but not necessarily very valid, measure of the difficulty of a text and looks at texts only as products, it was considered the formula is not useful for deciding if the test is appropriate for the purposes of the study or not. As Rigg (1896, p.75) puts it, "the basic assumption underlying any readability formula is that meaning is in the print, in the text. There is no recognition that meaning is created by each reader as the reader engages with the text." Even regardless of issues of individual reading

motivation and looking at texts as products, the criteria that are used by readability formulae are incomprehensive. In other words, no more factors other than word and sentence length are accounted for in readability formulas. Where this formula is not used, intuition may be relied on. If materials are regarded as boring or as too easy/difficult, readers become unmotivated to do the reading task (Scarcella & Oxford, 1992). Students were asked to state their opinion orally if they were interested in the topics whose passages they were supposed to take as tests. They reported they were interested in the topics showing the texts were of their interest. A text that is too easy or too difficult is not appropriate for reading comprehension test purposes. If it is too easy to comprehend, it furnishes few opportunities for strategy use. On the contrary, if a text that is too difficult to comprehend, it may not be comprehensible and short-circuits strategy use. According to Koda (2005) "Metacognitive capabilities become operative only in reading task perceived as hard but attainable. Tasks that offer minimal challenge will not be incentive enough for readers to make extra efforts to manipulate their cognitive resources" (p. 211). The test was shown to two language teachers both in the Indian and Iranian contexts for securing their opinions about the suitability of the content of the passages. In the Indian context, to have a reliable measure, the test was piloted against 15 students and through the K-R21 formula the reliability of the test scores turned out to be .68. In the Iranian context, the reliability of scores of the reading test as calculated through the K-R21 formula on 10 students was .81.

3.2.3. Reading strategy questionnaire

A five-point Likert scale reading strategies questionnaire (Never/Seldom/ Sometimes/ Usually/ and Always true of me) was employed to measure the strategic reading approach of the participants in the two groups. The instrument offered an immediate retrospective picture of the reading behavior of the participants. All the thirty-three items of the questionnaire

were adapted from different related questionnaires in research-validated studies (Baker & Boonkit, 2004; Oxford, Cho, Leung & Kim, 2004; Sheorey & Mokhtari, 2001; Taillefer & Pugh, 1998) and adopted for this study. Each items, however, was explained to the students in the two contexts to clear misunderstanding and any possible ambiguity. The reliability coefficient of the instrument at the piloting stage was calculated to be 0.78 and 0.69, for the Iranian and Indian contexts, respectively.

3.3. Procedures

After approaching the pre-university authorities in order to get their consent for doing the research, the purpose of the study was explained to them first. Afterward, before starting data collection, the students consented to take part in the study, as well. Then the participants were informed that their answers would be kept confidential and would not have any effect on their course evaluation. In the first session, the participants were asked to report the strategies that they were aware of and used while reading in their L1 reading tasks. The next session, the Nelson test of proficiency was administered among students. Through administering the proficiency test to the students in the two contexts, two groups of High and Low language proficiency levels were identified, that is, those whose scores were below the mean were taken as Low and those whose scores were above the mean as High group, in both Iranian and Indian contexts. Then the reading comprehension test in English was handed out to the participants to be completed in order to have an assessment of their reading ability in English.

4. Results

Descriptive statistics:

Table 1 indicates the means and standard deviations of the measures for the Iranian group. The mean score on reading strategy awareness in L1 was 60.66 (SD = 14.344), the mean score

on General English Proficiency was 11.32 (SD = 2.698), and the mean score on Reading Comprehension in L2 was 12.20 (SD = 3.150).

Table 1
 Means and Standard Deviations of the Measures for Iranian Group

	N	Mean	SD	Min	Max
Reading Strategy Awareness in L1 (RSA)	184	60.66	14.34	25	93
General English Proficiency (GEP)	184	11.32	2.69	5	19
Reading Comprehension in L2 (RC)	184	12.20	3.15	4	20

Table 2 indicates the means and standard deviations of the measures for the Indian group. The mean score on reading strategy awareness was 65.78 (SD = 14.037), the mean score on General English Proficiency was 11.80 (SD = 3.475), and the mean score on Reading Comprehension was 11.04 (SD = 3.964).

Table 2
 Means and Standard Deviations of the Measures for Indian Group

	N	Mean	SD	Min	Max
Reading Strategy Awareness in L1 (RSA)	157	65.78	14.037	25	95
General English Proficiency (GEP)	157	11.80	3.475	6	20
Reading Comprehension in L2 (RC)	157	11.04	3.964	4	24

In comparison with Iranian group, Indian group had higher mean scores for GEP and RSA. However, Iranian group had higher mean score for RC. Furthermore, eyeballing the standard deviations of the groups, we discern some apparent differences. The results indicate that Indian group had higher standard deviation scores on RC and GEP, indicating more diversity among this group than Iranian group. However, Iranian group had higher standard deviation score on RSA.

What follows tests the four research null hypotheses.

Research null hypotheses 1 & 2: There is no correlation between RSA, GEP and RC for both the Iranian and Indian groups.

The correlation matrix of the variables for the Iranian group is displayed in Table 3. All the correlation coefficients are statistically significant ($p \leq 0.01$). They are all relatively moderate. The correlation is 1 between RSA and GEP, 0.64 between RC and RSA, and 0.57 between RC and GEP measures.

Table 3
Correlation Matrix for all the Variables for Iranian group

		RSA	GEP	RC
Reading Strategy Awareness (RSA)	Correlation	1	0.612**	0.640**
	Sig		0.000	0.000
General English Proficiency (GEP)	Correlation		1	0.575**
	Sig			0.000
Reading Comprehension (RC)	Correlation			1
	Sig			

* ($p \leq 0.05$) ** ($p \leq 0.01$)

The correlation matrix of the variables for Indian group is displayed in Table 4. All the correlation coefficients are statistically significant ($p \leq 0.01$). They are all relatively moderate.

The correlation is 0.45 between RSA and GEP, 0.32 between RC and RSA, and 0.57 between RC and GEP measures.

Table 4
Correlation Matrix for All the Variables for Indian Group

		RSA	GEP	RC
Reading Strategy Awareness (RSA)	Correlation	1	0.454**	0.329**
	Sig		0.000	0.000
General English Proficiency (GEP)	Correlation		1	0.573**
	Sig			0.000
Reading Comprehension (RC)	Correlation			1
	Sig			

* (p≤0.05) ** (p≤0.01)

Therefore, the first and second research hypotheses stating there is no correlation between RSI, GEP and RC in both Iranian and Indian groups were rejected as the correlation between the three variables for both groups was relatively moderate.

Research null hypothesis 3: RSA and GEP do not predict performance on RC in L2 for Iranian and Indian learners of English similarly.

To test the third research hypothesis, the RSA and GEP scores of both Iranian and Indian students were regressed against their RC scores. The results of multiple linear regression analyses for Iranian and Indian groups are shown in table 5 and 6, respectively.

The result of multiple linear regression analysis for the Iranian group is as follows. In model 1 (the first model presented in table 5 in the first column) RSA was the sole predictor, accounting for 41% of RC score variance (adjusted R2=.41). When GEP was introduced to the regression equation in model 2, the regression weight for RSA remained significant (T>1.96, B=.46, P=000). GEP also was added significantly to the prediction of RC with R2 change of 0.46

and ($T > 1.96$, $B = .29$, $P = 0.000$). Both RSA and GEP emerged as significant variables (factors) in predicting RC. Together, the two variables accounted for 46% of shared variance in RC.

Table 5.
Results of Linear Regression for the Iranian Group

Model	β	SE	β (std)	T	Sig.	Df	R2	Adj R2	$\Delta R2$	ΔF	Sig.F change
1. RSA	0.14	0.01	0.64	11.24	0.000	1,182	0.41	0.40	0.41	126.41	0.000
2. RSA	0.10	0.01	0.46	6.69	0.000	2,181	0.46	0.45	0.46	78.15	0.000
GEP	0.34	0.08	0.29	4.24	0.000						

The result of multiple linear regression analysis for Indian group is rather different. In model 1, (the first model presented in table 6 in the first column) RSA was the sole predictor, accounting for 10% of RC variance (adjusted $R^2 = 0.10$). When GEP was added to the regression equation in model 2, the regression weight for RSA was non-significant ($B = .08$, $T < 1.96$, $P > 0.05$). Indeed, RSA did not add significantly to the predication of RC. Yet, GEP contributed significantly to the prediction of RC with R^2 change of .33 and F change of 0.38.73 and ($T > 1.96$, $B = .53$, $P = 0.000$)

Table 6.
Result of Linear Regression for the Indian Group

Model	B	SE	β (std)	T	Sig.	Df	R2	Adj R2	$\Delta R2$	ΔF	Sig. F change
1. RSA	0.09	0.02	0.32	4.33	0.000	1.155	0.10	0.10	0.10	18.75	0.000
2. RSA	0.02	0.02	0.08	1.16	0.246	2.154	0.33	0.32	0.33	38.73	0.000
GEP	0.61	0.08	0.53	7.24	0.000						

Therefore, the third hypotheses stating that RSA and GEP predict performance on RC in L2 for Iranian and Indian learners of English similarly, was rejected as context of learning changes contributions of the independent variables on the dependent variables differently.

Research null Hypothesis 4: RSA in L1 and General English proficiency at two high and low levels do not contribute to L2 RC similarly for both the Iranian and Indian groups.

The GEP mean score of 11.53, as calculated by dividing the total proficiency score of both Iranian and Indian students into the total number of Indian and Iranian students, was chosen to form the four groups. In other words, those who scored lower than 11.53 were considered as the low group of GEP, while those who scored higher than 11.53 were considered as the high group, in Iranian and Indian groups.

To test the fourth H0 for the Iranian and Indian groups, first a descriptive statistics of data is provided in Tables 7 and 8.

Table 7:
Means and SDs of Variables of the Low and High Levels of GEP for Iranian Group

Group	Variables	Mean	SD
Low (97)	RC	10.498	2.487
	RSA	52.927	11.023
	GEP	9.2887	1.4574
High (87)	RC	14.103	2.693
	RSA	69.287	12.626
	GEP	13.586	1.8079

Table 8.
Mean and SDs of Variables of the Low and High Levels of GEP for Indian Group

Group	Variables	Mean	SD
Low (86)	RC	9.279	2.973
	RSA	61.651	14.107
	GEP	9.186	1.4431
High (71)	RC	13.169	3.985
	RSA	70.774	12.296
	GEP	14.957	2.4227

A regression analysis was run, where RSA and GEP are the independent variables, and RC is the dependent variable. The students' level of GEP was divided into two groups-the low and high group- to investigate the influence of RSA and the low and high level of GEP on RC in L2.

Results of regression analysis of the two Iranian groups (high and low groups) are presented in tables 9 and 10, respectively.

Table 9
Results of Linear Regression and ANOVA for Iranian Low GEP Group

Model	Beta	T	p	Adj R2	F	P
RSA	0.451	4.549	0.000	0.264	18.251	0.000
GEP-Low (97)	0.136	1.366	0.175			

Table 10
Results of Linear Regression and ANOVA for Iranian High GEP Group

Model	Beta	T	p	Adj R2	F	P
RSA	0.407	4.042	0.000	0.161	9.281	0.000
GEP-High (87)	0.067	0.668	0.506			

As the results in tables 9 and 10 show, the role of RSA was significant, explaining about 26 percent (B=0.45, T>1.96, F=18.251, P<0.01) and 16 percent (B=0.40, T>1.96, F=9.281, P<0.01) of variances of RC for the low and high groups, respectively. Yet, the role of GEP (both in high and low groups) in predicting RC was non-significant (T<1.96, P>0.05, B=0.067 & B=0.136).

However, for the Indian group the result was different. The role of RSA for the low and high groups was insignificant (T<1.96, P>0.05, B=0.13 & B=0.07). Additionally, the role of GEP for the low group was non-significant (T<1.96, B=0.21, P>0.05). The contribution of GEP was rather significant for high group (B=0.36, T>1.96, P<0.05, F=6.28). It accounted for 13% of shared variance of RC. (see tables 11 and 12)

Table 11
Results of Linear Regression and ANOVA for Indian Low GEP Group

Model	Beta	T	p	Adj R2	F	P
RSA	0.131	1.165	0.247	0.063	3.857	0.025
GEP-Low (86)	0.217	1.922	0.058			

Table 12
Results of Linear Regression and ANOVA for Indian High GEP Group

Model	Beta	T	p	Adj R2	F	P
RSA	0.077	0.640	0.525	0.131	6.280	0.003
GEP-High (71)	0.360	2.999	0.004			

Therefore, the fourth hypothesis stating 'RSA in L1 and GEP (at two high and low levels) contribute to L2 RC similarly for both the Iranian and Indian groups' was rejected.

5. Discussion and Conclusion

This study showed that there is a moderate correlation between RSA in L1, GEP and RC in L2 in both Iranian and Indian groups. However, differences were found among language learners in the two Iranian EFL and Indian ESL contexts. Reading strategy awareness accounted for 41% and 10% of L2 reading comprehension variance for the Iranian and Indian groups, respectively. By introducing general English proficiency to the regression equation, the regression weight for reading strategy awareness is still significant for the Iranian group but not for the Indian group. In addition, for the Iranian group, both reading strategy awareness and general English proficiency are significant variables in prediction L2 reading comprehension but for the Indian group only general English proficiency, and not reading strategy awareness contributed significantly to the prediction of L2 reading comprehension. All these show reading strategy awareness and general English proficiency do not predict L2 reading comprehension in the two Iranian and Indian contexts similarly. In addition, for both the high and low Iranian GEP groups only the contribution of RSA, and not GEP was significant in the prediction of RC in L2. For the Indian group, the result turned out to be different. In this group, the role of RSA was insignificant in predicting RC in L2, for both high and low groups. However, in contrast with the Iranian group, in the Indian group the role of proficiency in predicting RC in L2 was non-significant for the low group, but rather significant for the high group. Findings of this study are to some extent in keeping with the findings of the study by Carrell (1991). Examining English native speakers studying Spanish and Spanish native speakers studying English in the USA, Carrell (1991) studied the L1 and L2 reading abilities of

the two groups by multiple-choice reading comprehension tests, and their L2 proficiency levels according to course levels in each language. Carrell analyzed the relative contribution of L1 reading ability and L2 proficiency to L2 reading by multiple regression analysis for each group. Analysis of data evinced that the contribution of both predictor variables was significant, though the relative contribution of the predictor variables was different for different groups. For English L1 speakers L2 language proficiency was found to be a stronger predictor, and for Spanish L1 speakers L1 reading ability was a stronger predictor. Carrell mentioned this difference can be due to possible causes, such as differences in L2 proficiency levels, possible statistical problems or the learning environment (foreign vs. second language).

As this study showed differences between the two groups in two different contexts are much more than their similarities, as the amount of contribution of L2 proficiency and L1 reading strategy awareness to L2 reading comprehension differs from context to context no matter if the proficiency level is controlled or not, meaning that the predictability of RSA and GEP to RC in L2, even when other moderating variables are considered (e.g., language proficiency as shown in this study) is context-dependent. According to Morphi (2003) many variables affect cross-linguistic transfer. These include learner-related (for example, language proficiency, amount of target language exposure and use, language mode, linguistic awareness, age, educational background, and context) and language-related variables (language typology, frequency of use of linguistic features, word class and morphological transfer). Research has shown particularly at lower proficiency levels (Fuller, 1999; Odlin, 1989; Poullisse & Bongaerts, 1994) amount of target language exposure and use and the amount of L2 instruction affect the likelihood of language transfer (Odlin, 1989).

On the relationship between L1 and L2 on the basis of the Interdependence hypothesis, Cummins (1980) states:

However, these relationships do not exist in an affective or experiential vacuum and there are several factors which might reduce the relationship between L1 and L2 measures of CALP in comparison to those between intra-language (L1-L1, L2-L2) measures. For example, when motivation to learn L2 (or maintain L1) is low, CALP will not be applied to the task of learning L2 (or maintaining L1). The interdependence hypothesis also presupposes adequate exposure to both languages (p. 179).

As exposure to L2 is much more in ESL context than in EFL context, the pedagogical implication of the findings of this study is that teachers in EFL and ESL contexts regard the effects of contextual variables on language learning, in general. In particular, reading teachers are encouraged to consider the significant role of context in reading success and its effects on the degree of contribution of different factors from L1 or L2 that affect L2 reading.

As Hymes (1972) noted, “the key to understanding language in context is to start not with language but with context... [and then to] systematically relate the two” (in Collentine & Freed, p.153). According to Collentine and Freed (2004) recently, the importance of learning context has been under debate in SLA studies. Some researchers (e.g., Long, 1997) posited that in SLA research the acquisition process is a psycholinguistic issue and relatively independent of external factors (e.g., sociolinguistic variables or the particular methodology for classroom learning context). Other researchers (e.g., Firth & Wagner, 1997) held that a good model of SLA considers the interaction of social activity and psycholinguistic elements. Those who based their contention on psycholinguistic issues in SLA refer to essentialism (i.e., the cognitive essence of the individual as they observe the world objectively determines what they learn) and those who believe in the interaction between social activity and

psycholinguistic elements base their contention on social constructivism which regards knowledge as a social phenomenon affected by historic and cultural variables (Burr, 1995). Findings of the current study support the second view. Therefore, according to the second perspective, the learning context is important to educators, educational policy makers and program designers as they must develop cohesive curricula that facilitate the process of language acquisition. (Collentine & Freed, 2004)

According to Chung, Chen, and Geva (2018, p.8) linguistic interdependence hypothesis is so broad that it 'does not specify the nature of underlying mechanisms that facilitate the transfer of metalinguistic skills'. As Prevoo, et. al. (2015) mentioned LIH does not pay much attention to contextual variables. Therefore, as context determines the predictability of different variables on L2 reading, pedagogically we need to apply our findings regarding the moderating effect of context in defining relationship between different languages in mind while designing the syllabus, developing materials, evaluating the course and the learning outcome, etc.

In this study, the Iranian participants were all male students as the Iranian educational system before students enter university is single-sex education and the Indian participants were a mixture of male and female students representing a co-educational system. As it would be oversimplifying not to consider the role of a myriad of other factors that can affect the relationship between L1 and L2 and the contributions of L1 reading strategy awareness and use and L2 proficiency to L2 reading comprehension, (e.g., Prevoo, et. al., 2015; Proctor, August, Snow, & Barr, 2010; Verhoeven, 1994) it is suggested that other researchers consider the role of gender as a moderating variable in investigating the legitimacy and value of LIT and LTH.

Researchers (e.g., Bossers, 1991; Bernhardt & Kamil, 1995, Taillefer 1996, Lee & Schallert, 1997) attempted to test the two hypotheses following Anderson's postulation of the relationship between the three variables using correlations and multiple regression. The current study was a descriptive survey study as well. To better understand literacy development in language learning and to investigate the transfer of literacy-related sub-skills of language, according to Genesee, et. al. (2006), intervention research studies are needed and recommended for further research.

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