

Investigating High and Low Achieving Talented Students' Strategy Use, Perceptions, and Challenges of Reading Comprehension

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Abstract

The purpose of this study was twofold: to determine pre-university talented students' perceptions, strategy use, and challenges of reading comprehension section of the university entrance exam and to investigate the difference between low and high-achieving talented readers in strategy use and attitudes to reading. The participants were 121 EFL students at pre-university centers for talented students in Borujen, Iran. The instruments were three questionnaires on reading strategy, reading attitude, and reading difficulty followed by five open-ended questions. The results revealed that talented students used metacognitive strategies more than affective and cognitive strategies; most talented readers had positive attitude to reading; and their most frequent challenges were insufficient vocabulary knowledge, inability to adapt their speed to allotted time, decentralization, and ineffective study. The results of backward stepwise binary logistic regression also indicated that high and low achieving talented readers were different in retrieval and anxiety-coping strategy use and reading self-efficacy. The findings have implications for teachers of talented students to consider their diversities and orient their teaching toward individual characteristics through providing instructional varieties.

Keywords: challenges, perceptions, reading strategy use, reading comprehension, talented students

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1. Introduction

Reading is a complex activity, because readers simultaneously need to use various skills to inform the connections between several elements of a written passage (Zulu, 2007). As stated by Phakiti (2006), different readers may differently process a similar text based on their goals, perceptions, motivation, characteristics, and background knowledge. However, educating students in reading mainly occurs with the goals of developing reading skills and positive reading attitudes (Sainsbury, 2004). It is found that successful readers are aware of and evaluate the cognitive activities involved in reading (Baker & Brown, 1984). Positive relationship was also found between their reading attitudes and their reading achievement (Martinez et al., 2008; McKenna et al., 1995).

Even though Iranian talented students are accepted in National Organization for Development of Exceptional Talents (NODET) after taking an annual comprehensive entrance examination and perform satisfactorily on their specialized courses, including math, physics, chemistry, and biology, some have difficulty comprehending English reading texts. In other words, most talented students are able to answer vocabulary and grammar questions on university entrance exam; however, their comprehension of reading passages on the exam is not satisfactory. As similarly noted by Marzban (2008), although English language programs in Iranian educational system mostly focus on reading skill, Iranian learners have major problems with reading comprehension. Learners' reading problems, according to Yimwilai (2008), may be due to their inability to find main ideas, insufficient vocabulary, and other reading comprehension challenges.

A number of studies have been conducted on talented students' reading strategy use (e.g., Reis et al., 2005; Reis & Renzulli, 2006; Renzulli & Reis, 2014; Tomlinson, 2000; VanTassel-Baska, 2015), reading attitude (Larsen, 1999), and reading challenges (Kamil, 2003; Mourtaga, 2005; Reis & McCoach, 2000; Reis et al., 2014; Rosen, 2019; Tatum, 2000; Wood, 2000). However, it seems there is no study investigating EFL talented students' reading strategy use, attitude, and challenges. This study thus aimed to explore pre-university talented students' strategy use, perceptions, and challenges of reading comprehension on the

university entrance exam. To identify high achieving talented students' strategy use and attitudes to reading comprehension and to compare their performance with low achieving talented students, the difference between these students in attitudes and strategy use were also investigated. The following research questions were thus formulated for this research:

1. What strategies are used by talented students for comprehending English texts?
2. What are talented students' perceptions of reading comprehension?
3. What are talented students' challenges of reading comprehension?
4. Is there any statistically significant difference between low and high achieving talented readers in strategy use?
5. Is there any statistically significant difference between low and high achieving talented readers in reading attitude?

2. Literature Review

Reading attitude, according to Oostdam et al. (2015), is individual's interest and feeling about reading skill, which makes learners determine their intent to read or not to read. It is also pertinent to various affective variables, including motivation, interest, and purpose (Ho & Guthrie, 2013; Lau, 2004). Mahato (2016) similarly suggests that positive attitude to reading ends in higher motivation, whereas negative attitude can prevent learners from making adequate endeavor and practice for reading activities. As argued by Isakson et al. (2016), learners' feelings and perceptions of reading may also be influenced by their previous experiences of reading, can rely on whether that experience was satisfactory or disappointing, and may change as new experiences appear. Beliefs and attitudes about reading skill are supposed to influence reading frequency, having an indirect impact on reading progress (McQuillan, 2013). Abdul Karim and Hasan (2007) found that negative attitude to reading can result in unfavorable reading experience and involve the disadvantage of poor educational performance and success. A number of researchers (e.g., Kim, 2016; Lin, 2017; McGeown et al., 2015; Shaunessy-Dedrick

et al., 2015) have shown that learners with better reading attitudes could improve their reading skills and were more competent in reading comprehension. Ulanoff et al. (2000) state that self-confidence can also impact the ways in which learners identify themselves as readers, as those with low self-confidence identify themselves as poor readers and may decide not to read, whereas those with high self-confidence consider themselves good readers and decide to read more often than other students in their grade with low self-esteem.

As Alvermann (2009) states, reading is an intricate skill with cognitive, emotional, and complex dimensions. Cognitive strategies are real conscious activities that readers are engaged in to process language, while metacognitive strategies include conscious processes that control cognitive strategies and other processes, which are considered closely related (Phakiti, 2006). As O'Malley and Chamot (1990) state, cognitive strategies include repeating, translating, grouping, resourcing, note-taking, predicting, clarifying, imagining, and making inference. Whereas, metacognitive skills include taking conscious control of planning, selecting, and learning strategies, monitoring learning progress, correcting mistakes, analyzing the efficiency of learning strategies, and changing learning strategies and behaviors where needed (Ridley et al., 2010). Metacognitive strategies also involve advance provision, adjusting reading pace based on various reading objectives and tasks, employing various reading strategies, possessing a clear goal of information to be captured, and actively assessing the reading process (Ling, 2011). Affective dimension also includes some variables, such as anxiety, attitude, motivation, interest, self-efficacy, and metacognitive reading strategies (Boerma et al., 2016; Huang & Yang, 2015; McGeown et al., 2016). According to Phakiti (2006), readers need regulatory or control processes, such as estimating situations and monitoring prevalent comprehension when reading difficulty arises, because such difficulty impacts the effectiveness of reading.

A number of studies (e.g., Renzulli & Reis, 2014; Reis et al., 2005; Reis & Renzulli, 2006; Tomlinson, 2000; VanTassel-Baska, 2015) have been conducted on talented students' reading strategy use. The main difference between successful and less successful readers is in the frequency and various uses of reading strategies (Malcolm, 2009). More proficient L2 readers appear to employ strategies more

often and in a more different and systematic manner than less proficient readers. Saricoban (2002) states that successful readers prioritize global or top-down strategies, such as predicting what would happen next, guessing the meaning of unknown words from context, and accessing to prior knowledge which are cognitive, metacognitive, and compensatory by nature, whereas poor readers employ bottom-up strategies, such as word for word text processing, grammatical structure focusing, sound-letter matching, word meaning, and paying attention to textual details.

It is stated that successful L2 readers are aware of how to use effective strategies to increase reading comprehension (Yang, 2002). A number of researchers (e.g., Anderson, 2003; O'Malley & Chamot, 1990; Phakiti, 2003; Salataci & Akyel, 2002; Shokrpour & Nasiri, 2011) have revealed that successful readers are different from less successful ones not only in quantity but also in quality of employing cognitive and metacognitive strategies. It is found that ineffective readers generally lack optimal metacognitive strategies (Alderson, 2000). Some other studies (Shokrpour & Nasiri, 2011; Zare-ee, 2007) have reported the metacognitive reading strategies as the most efficient strategies whose common application can distinguish successful from unsuccessful EFL readers. Shamsini et al. (2003) found that although proficient readers are expert in employing optimal strategies to easify the operation of various cognitive processes and to gain meaningful comprehension of texts, defective readers only read the texts word by word without considering any reading strategies. Chimbanga (2006) states that less proficient L2 learners employed reading strategies inattentively and randomly and do not often know when and how to employ the effective strategies in reading tasks. Fotovatian and Shokrpour (2007) found that successful readers employed a high percentage of metacognitive strategies, while successful and unsuccessful readers were not different much in their use of affective and cognitive strategies. Shokrpour and Nasiri (2011) investigated cognitive and metacognitive reading strategy use by 94 effective and ineffective academic IELTS test takers. The data analysis showed no significant difference between effective and ineffective readers in employing cognitive strategies. However, effective readers outperformed the ineffective ones in using metacognitive strategies.

Reis et al. (2004) suggest that talented readers be characterized in terms of five features: reading earlier and at higher levels, employing advanced processing in reading, showing enthusiasm for reading, representing advanced language skills, and choosing a random national sample of instructors. Not all talented students academically read at the same pace, and not all talented readers are considered academically gifted, because each of whom has his/her own unique ability (Reis & Renzulli, 2006). Stainthorp and Hughes (2004) state that talented readers mostly read at home or at school before their lessons are taught. As also found by Carton and Wingenbach (1986), they use prior experience related to a topic; employ higher-order thinking techniques, including analysis, synthesis, and assessment; and successfully connect important ideas in a text. Reis (2003) also found that talented readers comprehend language in detail, employ language for fun, write phrases and sentences at the beginning, and then innovate superior writing. Reis and Renzulli (2006) found that most talented readers do not profit from regular training in readings and only profit from properly challenging reading tasks despite the fact that they do not always receive such instruction. Van Tassel-Baska and Brown (2007) suggest that high-level readers are entitled to grow their reading abilities through examining an extensive range of genres and writing styles. According to Levande (1993), one technique to provide high-level readers with challenge is persuading them to read efficient literature that features a wide variety of lexical items. Research outcomes of classroom rehearsals and observations of talented and average learners demonstrate that few adjustments are made for talented learners in heterogeneous classrooms of general education (Reis et al., 2004).

It is also argued that if readers have not gained a certain threshold of language proficiency, they are unable to fully transfer the strategic skills, such as guessing meaning from context or making inference (Anderson, 2017). Differentiation aims to consider the variations among talented readers through multiple methods that modify, enrich, and adapt teaching and curricula to suit learners' needs (Reis & Renzulli, 2006; Tomlinson, 2000; VanTassel-Baska, 2015). Differentiation of education and curricula suggests that teachers can provide students with materials with various difficulty levels through enrichment, scaffolding, acceleration, different types of grouping, and various time programs (Tomlinson, 2000).

According to Renzulli and Reis (2014), the most prevalent strategy offered in the literature to meet high-level readers' needs is accelerating their reading through providing them with higher level materials. The other strategy is enriching the reading program with more challenging supplementary textbooks. Reis et al. (2004) also found that it is better to group talented readers together to discuss books with various reading difficulty levels about a common theme instead of simply having all students read and discuss the same book.

High-level readers may also profit from reading curriculum, emphasizing boosting creative and critical thinking skills, including the opportunity to discuss controversial issues; engaging in less structured instructional tasks; various levels of enrichment; and instructional or curricular differentiation, including curriculum compacting. According to Reis et al. (2005), applying higher-level questions can be integrated into reading experiences so that gifted readers can use advanced reading strategies and higher-order thinking skills. In addition, talented readers can be given chances to fulfil various types of innovative tasks and take part in substitute writing tasks (Renzulli & Reis, 2014). They should also be motivated to use prior knowledge or relevant experiences to interpret the challenging texts (Reis et al., 2005; Shakki, 2023). These students can use Internet to access authors' sites, find challenging online books and materials, and keep in touch with gifted students of other schools using circular literary discussion strategies by means of technology (Al-Obaydi et al., 2023; Reis & Boeve, 2009). It is found that educational experts favored reading instructional rehearses, such as homogeneous groupings, speediness and enrichment along with opportunities for debate and discussion, access to advanced literature and techniques to develop critical, inventive, and query reading for talented students (Reia et al., 2009; Wood, 2008).

3. Method

3.1. Participants

Participants were 121 talented students at Farzanegan and Shahid Beheshti pre-university centers, Borujen, Iran. They were studying Natural Sciences and

Mathematics, 105 of whom (86%) were female, while 16 students (14%) were male, ranging in age from 18 to 20 years. All participants were native speakers of Persian.

3.2. Instruments

Three questionnaires on reading strategy use, reading attitude, and reading problem followed by five open-ended questions were the instruments of this study. Talented students' reading comprehension scores on the university entrance exam was also used as the indicator of their achievement in the reading comprehension. The questionnaire on reading strategies developed by Phakiti (2006) examined talented students' reading strategy use at the university entrance exam. This questionnaire included 48 items with three categories of cognitive strategies (21 items), metacognitive strategies (14 items), and affective strategies (13 items). Each category also contained a couple of sub-categories: cognitive (comprehending strategies = 11 items; memory strategies = 5 items; retrieval strategies = 5 items); metacognitive (planning strategies = 6 items; monitoring strategies = 5 items, evaluating strategies = 3 items); affective strategies (motivation control strategies = 4 items; volition control strategies = 3 items, & anxiety coping strategies = 6 items). The questionnaire was also followed by an open-ended question on strategies learners used for comprehending reading texts at the university entrance exam.

Middle/Secondary Reading Attitude Survey developed by Baldwin et al. (1980) was used to investigate talented students' perceptions of reading skill. This questionnaire with 20 items included three categories of general reading attitudes (14 items), reading self-efficacy (4 items), and self-reported achievement (2 items). It was also followed by three open-ended questions about purpose of reading an English passage, ways of answering the reading comprehension section at the university entrance exam, and attitudes towards reading. To explore talented students' reading difficulties, the researchers developed a questionnaire on EFL reading difficulties with 13 items based on the literature, which was followed by an open-ended question on difficulties they faced while comprehending the reading texts along with their solutions to tackle the challenges.

3.3. Procedure

Initially, the researchers selected the reading strategy questionnaire developed by Phakiti (2006). They also adopted Baldwin et al.'s (1980) reading attitude questionnaire and developed a questionnaire on EFL reading difficulties based on extensive study of the literature. The open-ended questions on talented students' reading strategy use, attitudes, and challenges were also developed by the researchers. The instruments were then translated into Persian and then back translated to ensure students' full comprehension of the statements. After that, the instruments were piloted with a group of randomly selected students during their trial tests and analyzed for suitability prior to their actual application in the main study. Based on the feedback received, some modifications were made to the questionnaires to avoid possible ambiguities and problems.

Having received the results of their university entrance exam on September 2019, the researchers sent the instruments to participants via WhatsApp. They were also asked to report their score on English reading comprehension section of the university entrance exam, which would be kept confidential. They were then asked to complete the reading strategy questionnaire, which was a five-point Likert scale, ranging from never (1) to always (5), reading attitude questionnaire on a five-point Likert scale with the values ranging from strongly disagree (1) to strongly agree (5), and reading difficulty questionnaire on a five-point Likert scale ranging from never (1) to always (5). In addition, they were requested to answer five open-ended questions. The reliability of the questionnaires was also calculated using Cronbach's alpha: reading strategy (0.899), reading attitude (0.809), and reading difficulty (0.808).

3.4. Data Analysis

Descriptive statistics were conducted to explore talented students' strategy use, their perceptions of reading, and the difficulties they faced while taking reading comprehension tests. Moreover, descriptive statistics and Pearson product-moment correlation were performed for the categories of the questionnaires on reading perceptions and strategy use. In addition, content analysis was carried out on

students' answers to the open-ended questions. In other words, the most frequent patterns in their responses were identified, analyzed, and reported. Finally, to compare high and low achieving talented readers' strategy use and attitudes towards reading, backward stepwise binary logistic regression was conducted.

4. Results

4.1. Talented Students' Reading Strategy Use

To determine which strategies were used by talented students, the percentage of their strategy use was calculated, and the following strategies were mostly used, respectively: 'double-checking comprehension when encountering ambiguous information' (76.8%); 'making inferences based on the available information' (75.2%); 'doing their best to read the text' (71%); 'controlling concentration or attention during reading' (70.2%); 'guessing meaning of unknown words using contextual clues' (69.5%); 'note-taking and highlighting important ideas' (68.5%); 'investing extra effort to read text'; (62%), 'assessing levels of text difficulty and reading demands' (61.2%); 'identifying main ideas and author's attitudes/tones' (57.9%); 'applying knowledge of word stems, prefixes, or suffixes to guess meaning of unknown words' (57%); 'summarizing main information' (56.2%); 'encouraging oneself to read' (54.6%); 'reminding oneself of the importance of being able to read in English' (57.5%); 'connecting important ideas in text' (52.9%); 'paraphrasing or simplifying information to remember' (52.9%); 'using prior knowledge or experience relevant to the topic' (52.9%); 'overviewing texts or tasks before reading' (51.2%); 'keeping reading purposes in mind' (50.4%); and 'telling oneself to relax when dealing with difficult texts' (50.4%). Whereas, talented students reported less use of the following strategies, respectively: 'using a dictionary' (67.8%); 'relating new information in text with previously read text' (48.8%); 'stopping reading for a moment when feeling stressed or confused' (47.9%); 'engaging self-questioning while reading' (41.3%); 'using grammar rules to understand meanings' (38.9%); 'using available typographical features such as bold face, italics, pictures, tables or figures in text' (36.4%); 'predicting what happens next' (35.6%); 'translating message into native language' (33.9%);

‘distinguishing facts from opinions’ (33%); ‘convincing oneself that anxiety is only temporary’ (30.5%); ‘telling oneself that stress is normal for everyone’ (29.7%); and ‘planning steps or actions before reading’ (28.9%).

Reading strategies were classified into three categories of metacognitive, cognitive, and affective strategies. To investigate the mean for each category, descriptive statistics were run. Preliminary analyses, including normality, linearity, and homoscedasticity were also conducted to ensure no violation of the assumptions of correlational analysis. Accordingly, Pearson product-moment correlation was conducted to explore the relationship among the three categories of reading strategies. The correlational and descriptive statistics for the categories of reading comprehension strategies are provided in Table 1.

Table 1
Descriptive Statistics & Correlations of Categories of Reading Strategy Scale (N=121)

	Strategies	<i>M</i>	<i>SD</i>	1	2	3	<i>M</i>	<i>SD</i>
1. Cognitive	Comprehending	3.35	.43	-	.637**	.485**	3.36	.43
	Memory	3.55	.65					
	Retrieval	3.21	.65					
2. Metacognitive	Planning	3.43	.76		-	.504**	3.45	.59
	Monitoring	3.58	.64					
	Evaluating	3.29	.78					
3. Affective	Motivation-Control	3.65	.83			-	3.44	.62
	Volition-Control	3.53	.94					
	Anxiety-Coping	3.26	.71					

** . Correlation is significant at the .05 level (2-tailed).

As shown in Table 1, metacognitive strategies ($M = 3.45$) were mostly used by talented students, followed by affective strategies ($M = 3.44$) and cognitive strategies ($M = 3.36$). Table 2 also indicates that the responses to the ‘cognitive strategies’ were the most homogeneous ($SD = .43$), while those to ‘affective strategies’ were the most heterogeneous ($SD = .62$). As highlighted in Table 1, the correlation between affective and cognitive strategies was ($r = 0.485$), showing a medium positive correlation, whereas there was a significant large positive correlation between cognitive and metacognitive strategies ($r = 0.637$) and affective and metacognitive strategies ($r = 0.504$). With regard to the sub-categories of reading strategy scale, the most frequently used strategies were related to ‘motivation-control strategies’ ($M = 3.65$), while the least strategy use was related to ‘retrieval strategies’ ($M = 3.21$). The first open-ended question, *what reading strategies do you use in comprehending reading texts*, was administered to further explore the talented students’ reading strategy use at the exam, and their responses are hierarchically ranked as follows: ‘overviewing texts or tasks before reading’ ($n = 55$, $\% = 45.45$); ‘skimming’ ($n = 52$, $\% = 42.97$); ‘double-checking comprehension when encountering ambiguous information’ ($n = 52$, $\% = 42.97$); ‘identifying the main ideas’ ($n = 39$, $\% = 32.23$); ‘underlining important information’ ($n = 30$, $\% = 24.79$); ‘investing extra effort to read text’ ($n = 27$, $\% = 22.31$); ‘evaluating difficulty levels of texts’ ($n = 9$, $\% = 7.43$); ‘using prior experience related to the topic’ ($n = 6$, $\% = 4.95$); and ‘relaxing oneself when facing reading difficulty or pressure’ ($n = 2$, $\% = 1.65$).

4.2. Talented Students’ Attitudes to Reading

The second instrument was a questionnaire to explore talented students’ attitudes towards reading. The percentages of students’ responses to questionnaire items were calculated. The results are provided in Table 2.

Table 2
Percentages of Talented Students' Responses to Reading Attitude Scale (N = 121)

Items	Strongly disagree	Disagree	Somewhat agree	Agree	Strongly agree
1. Library books are dull.	3.3	35.5	38.8	15.7	6.6
2. Reading is a waste of time.	40.5	52.1	5.8	0.8	0.8
3. Reading English is one of my hobbies.	9.1	15.7	24.0	30.6	20.7
4. Reading is almost always boring.	28.1	54.5	12.4	3.3	1.7
5. I enjoy going to the library for books.	3.3	19.0	26.4	31.4	19.8
6. I don't have enough time to read books.	18.2	45.5	17.4	12.4	6.6
7. I would like to belong to a book club.	2.5	14.0	23.1	26.4	33.9
8. I like to take library books home.	5.8	14.0	31.4	24.0	24.8
9. Teachers want me to read too much.	7.4	19.0	24.8	26.4	22.3
10. You can't learn much from reading.	41.3	48.8	5.8	4.1	0
11. Books can help us understand other people.	0.8	0.8	17.4	44.6	36.4
12. I like to have time to read in class.	0	4.1	12.4	35.5	47.9
13. Reading gets boring after about ten minutes.	13.2	45.5	19.8	14.0	7.4
14. I like to read before I go to bed.	5.0	10.7	35.5	28.9	19.8
15. I believe that I am a poor reader.	17.4	38.8	26.4	8.3	9.1
16. Sometimes I think kids younger than I am read better than I do.	23.1	37.2	18.2	14.0	7.4
17. I can read English as well as most students being a year older than me.	0.8	17.4	21.5	33.1	27.3
18. I believe that I am a better reader than most other students in my grade.	2.5	36.4	30.6	14.9	15.7
19. Sometimes I get bad grades in reading and English.	10.7	32.2	30.6	23.1	3.3
20. I almost always get A's and B's in reading and English.	3.3	16.5	30.6	24.0	25.6

As shown in Table 2, the highest agreements with items of reading attitude questionnaire were received by the following statements, respectively: 'I like to have time to read in class' (83.4%), 'Books can help us understand other people' (81%), 'I can read in English as well as most students being a year older than me' (60.4%), 'I would like to belong to a book club' (60.3%), 'Reading English is one of my hobbies' (51.3%), and 'I enjoy going to library for books' (51.2%). Table 2 also indicates that talented students' negative responses were related to the following statements, respectively: 'Reading is a waste of time' (92.6%); 'You cannot learn much from reading' (90.1%); 'Reading is almost always boring' (82.6%); 'I don't have enough time to read books' (63.7%); 'Sometimes I think kids younger than I am read better than I do' (60.3%); 'Reading gets boring after about ten minutes' (58.7%); and 'I believe that I am a poor reader' (56.2%). To investigate the mean for each category of reading attitude scale, descriptive statistics were used. The results of preliminary analyses of normality, linearity, and homoscedasticity indicated no violation of the assumptions of correlational analysis. The results of Pearson product-moment correlation and descriptive statistics are provided in Table 3.

Table 3

Correlations & Descriptive Statistics of Categories of Reading Attitude Scale (N=121)

Categories	1	2	3	<i>M</i>	<i>SD</i>
1. General Reading Attitude	-	.344**	.252**	3.67	.48
2. Reading Self-Efficacy		-	.712**	3.43	.89
3. Self-Reported Achievement			-	3.38	.95

** . Correlation is significant at the .05 level (2-tailed).

As indicated in Table 3, general reading attitudes received the highest mean score ($M = 3.67$), which were followed by reading self-efficacy ($M = 3.43$) and self-reported achievement ($M = 3.38$). Table 3 also highlights that the responses to 'general reading attitude' were the most homogeneous ($SD = .48$), while those to 'self-reported achievement' ($SD = .95$) were the most heterogeneous. There was also

a large positive correlation between reading self-efficacy and self-reported achievement ($r = .712$), while there was a medium positive correlation between general reading attitude and reading self-efficacy ($r = .344$), and a small positive correlation between self-reported achievement and general reading attitude ($r = .252$).

The second open-ended question, *what is your perception of reading comprehension of university entrance exam*, was administered to talented students, and their responses are hierarchically ranked as follows: 'I need a great deal of repetition and practice' ($n = 40$, % = 33.5); 'having limited time' ($n = 25$, % = 21.55); 'texts are confusing and I got stressed' ($n = 16$, % = 13.79); 'fascinating and fun' ($n = 15$, % = 12.93); 'challenging' ($n = 14$, % = 11.6); 'being difficult far beyond what is taught in textbooks' ($n = 11$, % = 9.48); 'I have no worries if I use reading strategies' ($n = 8$, % = 6.89); 'measuring language proficiency and not memorization' ($n = 8$, % = 6.89); 'weighing strong students against weak ones' ($n = 5$, % = 4.31); and 'reading is not my favorite skill' ($n = 1$, % = 0.86).

The third open-ended question, *what is your purpose of reading an English passage*, was administered to highlight the talented students' purposes of reading a text. Their responses are hierarchically ranked as follows: 'just enhancing English proficiency to answer the questions at the university entrance exam' ($n = 25$, % = 21.18); 'promoting vocabulary knowledge' ($n = 24$, % = 20.33); 'speeding up reading comprehension skill' ($n = 21$, % = 17.79); 'gaining information on various topics' ($n = 18$, % = 15.25); 'entertainment' ($n = 17$, % = 14.40); 'having a great interest in English' ($n = 12$, % = 10.16); and 'getting acquainted with the western culture' ($n = 2$, % = 1.69).

The fourth open-ended question, *How do you comprehend the reading passages in the university entrance exam*, was administered and their responses are hierarchically as follows: 'through overviews reading questions and tasks before reading' ($n = 69$, % = 57.02), 'skimming the text' ($n = 57$, % = 47.10), 'identifying the main idea of each paragraph' ($n = 47$, % = 38.84), 'analyzing author's purposes' ($n = 26$, % = 21.48), and 'using reading strategies' ($n = 14$, % = 11.55). However, some students stated that they were unable to answer the English language part of the exam due to the lack of time' ($n = 13$, % = 10.74).

4.3. Talented Students' Problems with Reading Comprehension

The third instrument was a questionnaire on talented students' difficulties in comprehending reading texts. The percentages of each problem were computed. The results are given in Table 4.

Table 4
Percentages of Talented Students' Challenges of Reading Comprehension (N = 121)

Items	Never	Rarely	Usually	Often	Always
1- How to connect the ideas together	1.7	25.6	34.7	28.9	9.1
2- Topics from other cultures I know very little about	5.0	28.1	39.7	24.0	3.3
3- Finding the difference between main points and supporting details in a text	1.7	24.0	29.8	35.5	9.1
4- Understanding the implicit meaning of the text	2.5	24.0	33.9	28.9	10.7
5- Figuring out the main idea of each paragraph	8.3	26.4	19.0	33.9	12.4
6- Understanding the references	13.2	25.6	21.5	25.6	14.0
7- Using grammar rules to understand meanings	7.4	33.9	30.6	19.0	9.1
8- Mismatch between learner's prior knowledge and ideas in the passage	3.3	37.2	41.3	15.7	2.5
9- Lack of interest and motivation	4.1	12.4	19.8	43.0	20.7
10- Difficulty in guessing the meaning of vocabulary items from context	2.5	38.0	34.7	12.4	4.1
11- Limited allotted time to cognitively process the text	2.5	15.7	28.1	27.3	26.4
12- Answering detailed questions	0.8	21.5	35.5	27.3	14.9
13- Identifying word stems, prefixes, or suffixes to guess the meaning of unknown words	8.3	29.8	23.1	25.6	13.2

As shown in Table 4, talented students had most problems with 'limited allotted time' (53.7%); 'figuring out the main idea of each paragraph' (46.3%); 'finding the difference between main points and supporting details in a text' (44.6%); 'answering detailed questions' (42.2%), 'understanding the implicit meaning of a text' (39.6%); 'understanding the references' (39.6%); 'identifying word stems' (38.8%); 'how to connect the ideas together' (38%); and 'using grammar rules to understand meanings' (28.1%).

The fifth open-ended question, *Can you describe any difficulties you met while comprehending the reading section of university entrance exam? What did you do to solve your reading problems*, was administered and students' responses are hierarchically presented as follows: 'insufficient vocabulary knowledge' ($n = 57$, % = 47.10); 'limited allotted time' ($n = 55$, % = 45.45); 'complexity and length of the texts' ($n = 49$, % = 40.49); 'being unfamiliar with topics from other cultures' ($n = 24$, % = 19.83); 'mismatch between exam reading texts and school textbooks' ($n = 3$, % = 2.54); 'having difficulty concentrating' ($n = 2$, % = 1.65); 'lack of grammatical knowledge' ($n = 2$, % = 1.65), and 'having no problems' ($n = 2$, % = 1.65).

Students stated some solutions for their problems while comprehending the reading texts. Their solutions were as follows: 'practicing different types of texts' ($n = 47$, % = 38.84); 'enhancing vocabulary knowledge' ($n = 42$, % = 34.71); 'reviewing texts or reading tasks before reading' ($n = 28$, % = 23.14); 'identifying prefixes, suffixes, or word stems to guess the meaning of unknown words' ($n = 26$, % = 21.48); 'rereading' ($n = 21$, % = 21.48); 'controlling emotional stress' ($n = 14$, % = 11.57); 'dividing long sentences into shorter sections' ($n = 7$, % = 5.78); 'using grammar rules to understand meanings' ($n = 2$, % = 1.65); 'stopping reading for seconds when feeling confused or stressed' ($n = 1$, % = 0.82); and 'learning English from childhood through attending English language classes' ($n = 1$, % = 0.82).

4.4. Comparing High and Low Achieving Talented Students' Reading Attitudes and Strategy Use

To determine the difference between high and low achieving talented students'

attitudes towards reading, backward stepwise binary logistic regression was used. The results are presented in Table 5. The omnibus tests showed large observed significance levels, indicating that the model fits. To indicate the difference between high and low achieving talented readers' attitudes to reading, Cox and Snell and Nagelkerke were also computed, showing that the values of the pseudo *R*-square statistics for Cox and Snell and Nagelkerke were .051 and .069, respectively.

Table 5
Categories of Reading Attitudes in Equation

Categories of Attitude	B	S.E.	Wald	df	p	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a								
General Reading Attitude	.004	.417	.000	1	.992	1.004	.443	2.275
Reading Self-Efficacy	.453	.312	2.115	1	.146	1.573	.854	2.897
Self-Reported Achievement	.110	.283	.150	1	.698	1.116	.641	1.942
Constant	-2.278	1.512	2.271	1	.132	.102		
Step 3 ^a								
Reading Self-Efficacy	.536	.219	6.008	1	.014	1.710	1.113	2.625
Constant	-2.178	.790	7.612	1	.006	.113		

a. Variable(s) entered on step 1: General Reading Attitude, Reading Self-Efficacy, and self-Reported Achievement and Step 3: Reading Self-Efficacy.

As shown in Table 5, given the observed significance levels, the *p* value for only one category of attitude questionnaire was statistically significant ($p = .014$), indicating that high and low achieving talented readers were different in their self-efficacy for reading. Table 5 also shows no statistically significant difference between low and high achieving talented readers in general reading attitude and self-reported achievement. To determine the difference between low and high achieving talented readers in strategy use, backward stepwise binary logistic regression was also used. The results are presented in Table 6. The omnibus tests showed large observed significance levels in step 1, indicating that the model fits. The results also showed that the values of the pseudo *R*-square statistics for Cox and Snell and Nagelkerke were .107 and .144, respectively.

Table 6
Categories of Reading Strategies in Equation

Reading Strategies	B	S.E.	Wald	df	P	Exp(B)	95% CI for EXP(B)		
							Lower	Upper	
Step 1 ^a	Comprehending	-.413	.558	.549	1	.459	.662	.222	1.974
	Memory	.096	.393	.060	1	.806	1.101	.510	2.377
	Retrieval	.987	.427	5.332	1	.021	2.683	1.161	6.201
	Planning	.151	.307	.243	1	.622	1.163	.637	2.124
	Monitoring	-.172	.475	.131	1	.717	.842	.332	2.135
	Evaluating	-.105	.358	.087	1	.768	.900	.446	1.814
	Motivation-Control	-.071	.339	.044	1	.834	.931	.479	1.810
Step 8 ^a	Volition-Control	-.233	.319	.536	1	.464	.792	.424	1.479
	Anxiety-Coping	.794	.330	5.801	1	.016	2.212	1.159	4.219
	Constant	-3.538	1.801	3.857	1	.050	.029		
	Retrieval	.650	.299	4.725	1	.030	1.915	1.066	3.440
	Anxiety-Coping	.595	.280	4.516	1	.034	1.814	1.047	3.141
Constant	-4.372	1.309	11.162	1	.001	.013			

a. Variable(s) entered on step 1: Comprehending, memory, retrieval, planning, monitoring, evaluating, motivation-control, volition-control, and anxiety-coping and Step 8: retrieval and anxiety-coping.

As indicated in Table 6, given the observed significance levels, the p value for two categories of reading strategies, i.e., retrieval strategies ($p = .021$) and anxiety-coping strategies ($p = .016$) were statistically significant, indicating that high and low achieving talented readers were different in the use of retrieval and anxiety-coping strategies. Table 6 also indicates no statistically significant difference between low and high achieving talented readers in using strategies of comprehending, memory, planning, monitoring, evaluating, motivation-control, and volition-control.

5. Discussion

Findings of the study revealed that talented students mostly applied metacognitive strategies, while cognitive strategies were the least applied ones. This can be due to the fact that most talented students are studious and are often relegated to practice autonomously. The students' tendency to apply more metacognitive strategies may

be pertinent to their high ability for monitoring and evaluating their reading comprehension as they indicated good use of overviewing texts before reading, double-checking reading comprehension when facing ambiguous information, and assessing difficulty levels of texts. Stainthorp and Hughes (2004) also found that talented readers often read before receiving any instruction when they are at home or in school. Their deficiency to use cognitive strategies may be related to their problems with using retrieval strategies, including using prior knowledge, relating new information with previous parts of the text, and recalling reading purposes. The findings of this study concur with previous studies (e.g., Anderson, 2003; Phakiti, 2003; Salataci & Akyel, 2002; Shokrpour & Nasiri 2011), emphasizing that ineffective readers generally lack optimal metacognitive strategies, while effective L2 readers are expert in employing optimal metacognitive strategies to raise text comprehension. Purpura also found that high and low achievers use reading strategies in different ways; for instance, the deficient performers indicated an extremely less use of metacognitive strategies for retrieving prior information, whereas the efficient performers employed metacognitive strategies for comprehension and retrieval of information from long-term memory. In addition, the findings of this study substantiate previous ones by Fotovatian and Shokrpour (2007) and Shokrpour and Nasiri (2011), showing that successful readers employed more metacognitive strategies, while successful and less successful readers were not much different in applying affective and cognitive strategies.

Given learners' perceptions of reading comprehension, nearly more than half of those surveyed reported that they had positive attitudes to reading. The results also revealed that talented students' attitudes toward reading were mostly shaped by the value students put on gaining information on specific topics, comprehending various texts in English, increasing vocabulary knowledge, and enhancing language proficiency. This finding lends support to that of Naseri and Zaferanieh (2012), indicating that both L2 reading attitude and self-efficacy could play significant roles in boosting reading skill. In addition, Little and Hines (2006) found that learners with more reading practice are better readers and have more positive attitude to reading. However, some talented students showed negative attitudes to reading comprehension passages of university entrance exam due to having limited time,

being confusing and stressful, being challenging, requiring a great deal of repetition and practice, and being difficult far beyond what is taught in textbooks. These findings corroborate with previous results by Mahato (2016), indicating that positive attitude towards reading ends in higher motivation, whereas negative attitude can prevent learners from making adequate endeavor, practice, and engagement in reading activities. The finding is also in consistent with that of Morgan et al. (2008), showing that learners who are struggling readers have less positive views of themselves as readers, feel powerless, and are more likely to act out because they are unsure of what to do. Abdul Karim and Hasan (2007) also found that negative attitude to reading can result in negative reading experience, and learners can ultimately show poor reading success and performance.

The findings also revealed that high and low achieving talented readers were different in the retrieval and anxiety-coping strategy use. This may be due to the fact that high achieving readers were able to control their anxiety and effectively use their prior knowledge. Another reason may be related to the fact that the less the prior knowledge is, the more likely it causes anxiety. As high achievers have a higher level of prior information, they can control their concentration even in stressful situations, such as university entrance exam and can retrieve their previous information from their long-term memory and relate new information in text with prior one. This finding is in line with that of Willingham (2018), indicating that readers' understanding of a text relies more on how much prior knowledge and vocabulary they have than on how much practice they have experienced on comprehension skills.

High and low achieving talented readers were found to be different in their reading self-efficacy. It may be due to the fact that high achieving readers identify themselves as skilled readers, value the reading process, and practice various types of supplementary texts regularly out of enjoyment, while low achieving readers do not identify themselves as skilled readers and try to avoid reading, which can lead to low reading achievement. This finding is in line with that of Erdem et al. (2017), showing that high self-efficacious readers are much better in specifying and achieving the reading goals. Numerous studies (e.g., Isakson et al., 2016; Mahato,

2016; Renzulli & Reis, 2014; Sani & Zain, 2011; Abdul Karim & Hassan, 2007) have also acknowledged that reading success is closely related to views about reading competence and that learners' feelings and perceptions of reading can also be influenced by their prior experiences with reading.

The results also showed that one of the most problematic aspects of talented students' reading comprehension was insufficient vocabulary knowledge. The reason for this finding is probably related to the fact that Iranian educational system devoted less time to teaching and practicing vocabulary through using effective vocabulary learning strategies. Learners' vocabulary skills and background knowledge are particularly important; therefore, the students' vocabulary development should not be left to chance despite their giftedness. Other problems were limited time and inability to adapt their speed to allotted time, because questions of English language appeared at the end of general courses at the university entrance exam, leading to stress and missing the chance of answering the reading comprehension questions.

The results are in line with those of Sibold (2011), arguing that language learners' difficulty in reading comprehension is mainly related to their difficulty with comprehending words, preventing them from comprehending texts they are asked to read. Perin (2013) also found that learners' major reading difficulties were related to vocabulary knowledge and selecting effective techniques of reading. Qarqez and Radzuwan (2017) also reported unfamiliar vocabulary and limited time to process texts as the main challenges of reading. Al Seyabi and Tuzlukva (2015) and Al Khawaldeh (2012) found lack of familiarity with vocabulary items and mismatch between learner's prior knowledge and ideas in the texts as the most frequent challenges.

6. Conclusion

The study explored talented students' perceptions, strategy use, and challenges of reading comprehension and determined the difference between low and high achieving talented readers in strategy use and attitudes to reading. The results of both quantitative and qualitative analysis showed that double-checking

comprehension when encountering ambiguous information and overviewing texts before reading were the most frequent strategies used by talented students. In addition, the findings revealed that high and low achieving talented readers were different in retrieval and anxiety-coping strategy use and in their perceived reading self-efficacy. Therefore, teachers need to learn about learners' individual diversities and orient their strategy teaching toward individual characteristics through providing instructional varieties. The findings also revealed that talented readers' performance on reading section of university entrance exam was not satisfactory, showing that language courses were not effective enough to help learners comprehend the reading texts at the university entrance exam.

It is argued that only when individual differences are acknowledged, embraced, and acted on in the classroom, talented students can be provided with an effective curriculum. Therefore, special programs should be provided by schools to adequately help learners with high or low reading ability. To help talented students improve their reading comprehension, instructors and materials developers are recommended to offer effective tasks for teaching and testing purposes according to learners' reading proficiency and to use authentic reading texts with interesting content. Designing and implementing different reading syllabi and activities based on learners' ability levels have also been emphasized by Mosalli et al. (2022). Strategy instruction can also have a significant part in promoting students' strategic behavior (Fathi & Shirazizadeh, 2020); hence, instructors should help learners enhance their awareness of reading strategies by teaching them how to utilize the strategies effectively in comprehending reading passages. Considering talented students' minimal use of affective and cognitive strategies, instructors should focus on retrieval strategies, including recalling reading purposes and anxiety-coping strategies, such as stopping worries about previous reading experiences and improving existing reading performance. Given the fact that vocabulary knowledge seems to be a pivotal concern of talented students in reading comprehension, serious attention needs to be given to both vocabulary instruction and its related strategies to help learners effectively deal with this concern.

Future researchers can investigate the contribution of self-regulation, autonomy,

motivation, and anxiety to talented students' reading achievement. They can also interview these students about their problems, perceptions, and strategy use at university entrance exam. Further study can be conducted examining talented students' levels, problems, perceptions, and strategy use in language learning components, including vocabulary and grammar at university entrance exam. Another study can be conducted on the effects of reading strategy instruction on talented students' reading achievement. Talented students' reading comprehension in various EFL and ESL contexts can also be compared. One limitation of this study was that the researchers did not access the percentages of students' reading performance reported by National Assessment Organization and had to only rely on students' self-reported percentages in the university entrance exam. The number of female participants was also higher than that of male ones. The researchers also limited the reading strategies to only three categories of cognitive, metacognitive, and affective.

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