

RESEARCH ARTICLE

A survey study of success attribution factors in reading comprehension performance-evidence from Chinese college students of Japanese language majors

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ABSTRACT

Attribution beliefs are important psychological factors that affect students' reading performance. This paper reports a survey study on Japanese Major students' success attribution factors in reading comprehension performance through a questionnaire and follow-up interviews. The participants are 160 third-year Japanese language learners from four universities in Jiangsu Province, China. Findings revealed that 1) the Japanese third-year language learners show a tendency of positive attribution style on the whole, with the mean value of *Internal Factors* (Mean=3.68) higher than that of *External Factors* (Mean=3.23), which means that most of Japanese Major learners attribute their success to *Internal Factors* in terms of Japanese reading comprehension performance. 2) There are differences existing between high achievers and low achievers with regard to success attribution factors in Japanese reading comprehension performance, with high achievers' mean scores higher than low achievers in both *Internal Factors* and *External Factors*. The research findings have greatly enhanced our understanding of Japanese language learners' success attribution beliefs in reading comprehension performance, which will provide educational guidance and recommendation for both teachers and students during the process of teaching and learning Japanese language.

Keywords: external factors; internal factors; Japanese Major Junior students; positive attribution; reading comprehension performance; success attribution

1. Introduction

Reading comprehension is a multifaceted and complex process of understanding a text, which relies on various linguistic, cognitive and psychological processes, in addition to basic reading skills.^[1-3] And for Japanese language learners in mainland China, reading comprehension is one of the most difficult sections in some examinations, like NSS-4 (National Standardized Test of Grade 4 for all Japanese language learners in China), NSS-8 (National Standardized Test of Grade 8 for all Japanese language learners in China), JLPT (Japanese Language Proficiency Test). Achieving high academic performance in Japanese reading comprehension is not only related to students' learning ability and intelligence, but also closely related to their attribution beliefs in foreign language learning^[4-6]. Attribution beliefs are important psychological

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factors that affect students' reading performance^[7]. Attribution refers to the way in which students interpret their achievement outcomes, in particular, how they explain success or failure as well as the consequences on their subsequent behavior, emotions, and motivations^[5, 8-10]. On the basis of positive psychology, this paper investigates the success attribution beliefs of Japanese language major students' reading comprehension and explores the discrepancy between high achievers and low achievers with regard to success attribution factors in reading comprehension performance by adopting questionnaires and interviews. The investigation results and analysis of Japanese major students' success attribution factors in reading comprehension performance will help to better understand the psychological factors that may affect Chinese College students' learning Japanese language, which is beneficial to further promoting the effectiveness of Japanese language teaching and learning in China.

2. Literature Review

2.1 Attribution Theory

Attribution Theory was first put forward by Heider^[11], an American psychologist, in which he stated that the consequences of a behavior were mainly influenced by two factors: *personal factors*, which are internal factors, including a person's ability and motivation; and *environmental factors*, namely *external factors*, mainly including luck and difficulty of some tasks.

In 1979, based on Heider's Attribution Theory^[11] and Atkinson's Achievement Motivation Theory^[12], Weiner^[13] proposed Attribution Theory of Motivation and Emotions, which introduces emotional and motivational factors involved in academic success and failure. The biggest advantage of this theory is that it relates the attribution of success and failure with motivation, which provides a good cognitive psychological explanation to behavioral motivation^[14-15].

According to Weiner's Attribution Theory, people tend to accredit their success/failure behavior to the following **causes**: *Ability, Effort, Task difficulty, Luck, Mood and so on*. 1) *Ability* means the individual's assessment of whether he or she is competent for the task. 2) *Effort* refers to the personal reflection on whether they have done their best in the process of the task. 3) *Task difficulty* means one's judgment about difficulty of some tasks according to his or her personal experiences. 4) *Luck means* whether the individual believes that the success of some tasks is related to luck. 5) *Mood* means whether the individual's psychological and emotional conditions at that time during the work process affect the work effectiveness. 6) *Other factors*, which means that there are other related matters or factors that influence the success or failure of the task, such as the help from others.

The above six factors are divided into three aspects, "the locus dimension, the stability dimension and the controllability dimension"^[16-17]. Firstly, the locus dimension, which refers to the source of factors that individuals believe may have a significant impact on their learning success or failure, which may be either internal or external. In this dimension, *ability, effort* and *mood* belong to internal attribution, whereas, the other factors belong to external attribution. Secondly, the stability dimension, which refers to the individuals' beliefs that whether the factors are stable in nature and consistent in similar situations. In this dimension, *ability* and *task difficulty* belong to factors which are relatively steady factors, and others are unsteady factors. Thirdly, the controllability dimension, which refers to the individuals' view of whether the factors can be determined by their own will. In this dimension, only *effort* is controllable, and the others are uncontrollable.

Weiner's researches^[13] have proved that when individuals owe their success to internal, stable or controllable factors, their motivation will be enhanced; while when they ascribe their success to some external, unstable or uncontrollable factors, their motivation will be weakened. Moreover, when individuals

accredit their failure to some external, unstable or controllable factors, their motivation is more possibly to get protected; while if they attribute their failures to internal, stable or uncontrollable factors, it will be the other way around. It is worth mentioning that owing one's success or failure to one's *effort* instead of one's *ability* produces stronger emotional experiences.

2.2 Review of previous studies on attribution

Up till now, many researchers focus on Attribution theory and the relationship between learners' success attribution in foreign language learning and academic achievement both abroad and at home.

In the west, firstly, a number of researches have shown that language learners' attribution is an important psychological factor influencing their foreign language achievement^[18]. For instance, Yazdanpanah et al.^[19] conducted researches with 120 English major students to examine the correlation between learners' attributions and EFL proficiency, which revealed a significant relationship between learners' attributions and EFL proficiency. In 2017, Bzioui^[20] made a questionnaire survey into successful students' attributions for learning English in Morocco and found that the successful students were more self-motivated, possessing more positive attitude, getting more input and having more practice in English language learning.

Secondly, some researchers laid emphasis on the function of internal elements in acquiring success in learning a foreign language. For example, Kun and Liming^[21] reported that more self-regulated learners usually accredited their success to internal factors. Genç^[22] found that Turkish tertiary level EFL students were more likely to ascribe their success to internal elements while putting the blame of their failure on external reasons. Luu Hon Vu^[23] made a questionnaire survey with 142 students majoring in Chinese Language at Ho Chi Minh City Open University, which found that "there existed a positive correlation between learning results and attributions of ability and effort to success". However, some other researches emphasized the importance of external factors in affecting students' language learning. For example, in 2018, Bouchaib et al.^[24] explored three high school students' success attribution in English language learning in Morocco, which found that students accredited their English language learning success chiefly to external reasons, such as *classroom atmosphere*, *teaching method*, *task difficulty*, etc. Whereas, Mohammadi and Sharififar's^[25] research revealed that students tended to ascribe their learning success to both internal and external attributions but put top-priority to external ones.

Thirdly, some researchers found that language learners of high proficiency level tended to make internal attributions while those of low proficiency level were likely to owe their failure to some external elements. For example, Adiba^[26] found that high-level learners regarded *ability and effort* as internal reasons for their good performance, while low-level learners ascribed their poor performance to some external reasons like *task difficulty* and *luck*. Graham^[27] revealed that those students with high levels of achievement in French credited their success to internal elements, like *effort*, *high ability*, and *effective learning strategies*. Hsieh's^[28] results showed that the more successful learners tended to owe their success to internal, stable and personal reasons, while the less successful learners made external, unstable, and non-personal attributions. Gobel and Mori^[29] discovered that more successful learners ascribed their learning success to teachers' teaching and learning environment, while less successful learners attributed their failure to lacking efforts and ability. To sum up, numerous researches have been carried out to examine the causal relationship of attribution factors in educational contexts and to determine the effects of these attribution factors on foreign language learning achievement and achievement-related results^[5, 18, 30-33].

In China, in spite of the late beginning in this domain, a lot of achievements have been made by researchers, focusing on success attribution in foreign language learning, including English majors and non-English major students.

In terms of English majors, Zhang^[34] found that most of English major junior students identified themselves as unsuccessful English language learners, who ascribed their unsuccessful English learning to their deficiency of ability. Pan and Chen^[35] revealed that there were significant differences in English majors' failure attribution to external factors between education levels, grades, genders. Liu^[36] made a questionnaire survey study with 169 English major juniors, finding that the general tendency of attribution preference was positive and students attributed their learning success or failure to making efforts. Li^[37] made an analysis of the influencing factors of self-learning ability, finding that a significant positive correlation existed between English major students' learning ability, internal attribution and learning objectives, the utilization of learning strategies.

With regard to non-English majors, Li^[38] reported that the majority of non-English major students credited their successful English learning to internal factors, while a minority of them ascribed to external factors. Shi^[39] found that the excellent students of non-English majors shared great similarities in attribution, all of which were stable, internal and controllable factors. Zhu and Li^[40] made a research of 154 non-English majors' attribution tendency, finding that the majority of the learners were more liable to attribute their successful English learning to internal elements.

Compared with studies on English majors and non-English majors, there were fewer studies focusing on Japanese major college students' success attribution. Shi and Wang^[41] conducted an investigation with 79 sophomores of Japanese major students about the relationship between gender difference of attribution tendency and the effects of Japanese grammar learning through questionnaires and interviews. The results revealed a significant discrepancy of attribution between males and females and a positive relationship is also found between attribution tendency and the effect of Japanese grammar learning.

However, based on the existing database literature retrieval, few studies in China have been made on Japanese language learners' attribution beliefs, and no empirical researches have been reported to explore Japanese major junior students' success attribution factors in reading comprehension performance. Thus, this study intends to examine the general situation of Japanese junior students' success attribution factors in reading comprehension performance by means of a questionnaire and interviews, and to analyze the discrepancy between high-level and low-level students in terms of success attribution in reading comprehension performance.

3. Research Method

3.1 Research questions

On the basis of the review of the previous related researches, the present study intends to answer the following two research questions:

- 1) What is the general situation of Japanese major junior students' success attribution factors in reading comprehension performance?
- 2) What are the differences between high-achievers and low-achievers concerning success attribution factors in Japanese reading comprehension performance?

3.2 Participants

In this study, 195 questionnaires were distributed by random sampling among third-year Japanese language learners in four universities in Mainland China. The four universities are the mainstream public provincial universities in China, belonging to the same categories in terms of students' comprehensive abilities, fundings, teachers' abilities and infrastructure conditions. Secondly, the enrollment scores of the students in the four universities are similar, which means that all these students may have the similar knowledge level in starting to learn Japanese language. Thirdly, the four universities all have the Japanese Major Department, with about 50-60 Japanese language learners enrolled each year.

This study used online survey called SoJump to collect the data. An anonymous link was administered via social media platforms such as QQ and WeChat. A total of 172 questionnaires were returned and 160 were considered valid for further analysis. Among all the participants, males account for 21.2% and females account for 78.8%.

That the third-year Japanese language learners are selected as the participants of the study is chiefly based on the following two reasons: firstly, the third-year Japanese majors have been studying Japanese for over two years in college, and therefore they must have already accumulated some learning experiences in Japanese language learning; and secondly, some students who learned relatively better than the others are quite clear about the way of success learning attribution, and therefore the questionnaire survey of Japanese major students' success attribution in reading comprehension is meaningful to a certain extent.

3.3 Instruments

A questionnaire on success attribution factors in Japanese reading comprehension and an interview are employed in this research. The questionnaire is mainly adapted from the attribution questions related to academic achievement in the "Multidimensional-Multiattributitional Causality Scale" (MMCS) ^[42], and then modified according to the actual learning situation of Japanese major students in China. The questionnaire includes two sections. Section one provides personal background information, such as *name, university, department, major, grade and class*. Section two shows the self-measurement scale of "A Survey on Japanese Major Students' Success Attribution Factors of Reading Comprehension Performance", in which **Success Attribution Factors** contain 20 items of two broad categories: **Internal Factors** (9 items) and **External Factors** (11 items). **Internal Factors** cover *Ability, Effort, Mood*, and **External Factors** include *Luck, Task difficulty, Teacher's help and Learning environment*. (See **Table 1**)

Table 1 Reliability Analysis of the Questionnaire

Categories		Items	Alpha
Internal Factors	Ability	2, 11, 17	.738
	Effort	1, 8, 15	.761
	Mood	7, 12, 19	.729
External Factors	Luck	3, 9, 16	.704
	Task difficulty	4, 20	.761
	Teacher's help	6, 13, 18	.701
	Learning environment	5, 10, 14	.763

Besides, the questionnaire adopts a five-point Likert scale ranging from one to five to measure each item of the attribution factors, indicating how much the third-year Japanese language learners agree to this statement. Among the five points, "1" to "5" represents "completely disagree" to "completely agree", with a

score of 1 to 5. The higher the score on a certain factor, the more important this factor is in the situation being studied.

As one questionnaire is not enough to know the detailed information of Japanese language learners' success attribution factors in reading comprehension performance, the semi-structured on-line interviews were added to obtain more specific information. The on-line interviews purposefully selected sixteen students with different backgrounds, with 2 high achievers and 2 low achievers in each university. The interview questions intended to explore the reasons behind the questionnaire in more details. All the interviews were tape-recorded and transcribed afterwards, eliminating irrelevant information about success attribution factors.

3.4 Data collection and analysis

According to the arrangement, the questionnaire was administered to 195 Japanese language learners across four universities in Jiangsu province, China via SoJump. In total, 160 valid questionnaires were used for further analysis.

Then the valid data is processed with SPSS (the Statistical Package for Social Sciences) 26.0 for statistical analysis which includes the following two steps: 1) use descriptive statistics to get the mean and standard deviation of Japanese language learners' general situation of success attribution factors in reading comprehension performance (see Table 2); 2) Based on the Japanese language learners' NSS4 scores, the top 1/4 participants were selected as high-level achievers and the bottom 1/4 participants were chosen as low-level achievers. Then an independent-samples T-test was employed to analyze the discrepancy between the two groups regarding success attribution factors in Japanese reading comprehension performance (see Table 3).

4. Results and discussion

This part reports the results of the questionnaire and the interviews, which aim to answer the two research questions mentioned above respectively.

4.1 General situation of Japanese major junior students' success attribution factors in reading comprehension performance

Table 2 shows the descriptive statistical results of **Japanese Major Junior Students'** success attribution factors in reading comprehension performance, containing two broad categories of **Success Attribution Factors** (*Internal Factors and External Factors*) and seven sub-categories. Based on Table 2, the mean score for *Internal Factors* is 3.68, higher than that of *External Factors* (Mean=3.23). Within the category of *Internal Factors*, it is found that the mean scores for the three specific items are all above 3.00, which indicates that the majority of Japanese language learners agree that their learning success mainly results from some *Internal Factors* in terms of Japanese reading comprehension. This result is just corresponding with the finding made by Genç^[22], who revealed that "EFL learners were more inclined to attribute success to internal factors".

Table 2 Descriptive Statistics of Japanese Major Students' Success Attribution Factors in Reading Comprehension Performance

Categories	Number	Mean	Standard Deviation
Internal Factors	160	3.68	.91
Ability	160	3.71	.83
Effort	160	3.83	.85
Mood	160	3.49	1.04
External Factors	160	3.23	1.06
Luck	160	2.39	1.20
Task difficulty	160	3.71	1.12
Teacher's help	160	3.65	1.15
Learning environment	160	3.16	.75

Among the three subcategories of *Internal Factors*, the mean score for *Effort* (Mean=3.83) ranks the first, followed by *Ability* (Mean=3.71) and *Mood* (Mean=3.49). *Effort* reaches the highest point, which demonstrates that the majority of Japanese major juniors hold the view that the good performance in Japanese reading comprehension mostly results from one's efforts in Japanese language learning. This result is much in agreement with the research finding made by Pishghadam and Zabih^[43] in Iran, who found a significant positive correlation between *Effort* and foreign language achievement. Isabel and John^[44] got the similar finding that "students predominantly perceive 'effort' as an enabler to their future success". Weiner (1979) also proposed in his attribution theory that *Effort* factor is internal, controllable and unstable. Japanese language learners ascribe their learning success to *effort*, which belongs to the internal and controllable factor, which may in turn improve their self-esteem and motivation in their future Japanese language learning. Therefore, Japanese teachers should encourage students to form a positive attribution belief, letting students know that they can succeed as long as they can make efforts. The more efforts you make, the better achievement you will make, which is quite understandable. Therefore, if foreign language learners can realize the significant positive relationship between making efforts and success in their language learning, the majority of them are sure to achieve great success in foreign language learning^[4,18].

Following *Effort* (Mean=3.83), the mean score of *Ability* (Mean=3.71) ranks the second, which indicates the significance of learning ability in the successful performance of Japanese reading comprehension. This finding is much in agreement with the results made by Gobel & Mori^[29], who reported that the students ascribed their success to learning ability and made more preparation for reading activities.

Among all the *Internal Factors*, the mean score of *Mood* (Mean=3.49) is the lowest, however, it is still above 3, indicating that being relaxed and keeping a good mood can make one doing better in reading comprehension tests. This finding reveals that most of Japanese major junior students attach great importance to the physical and mental state of doing reading comprehension exercises, which is also supported by the descriptions of one high-level interviewer. When asked the reasons why she did so well in reading comprehension section (one high achiever), she mentioned that she could always keep calm and relaxed during the test, making sure that she could finish the reading comprehension exercises without interrupting her train of thought.

In terms of *External Factors*, except *Luck* (Mean=2.39), the mean scores for all the other three factors are above 3.00, with *Task difficulty* reaching 3.71, followed by *Teacher's help* (Mean=3.65) and *Learning environment* (Mean=3.16). The majority of students believe that the difficulty level of the reading materials

may decide their performance in Japanese reading comprehension. Moreover, *Teacher's help* also plays a decisive role in finishing Japanese reading comprehension tasks because the Japanese major junior students can always use some reading skills taught by the teacher in the class when doing the reading comprehension exercises. *Learning environment* is also important in success attribution of Japanese reading comprehension, because the students can perform better when they are in a more stable environment, such as “being involved in intensive time-limited exercises, rather than doing while playing” (Item 14). The above findings are not quite unreasonable, which corroborates the results of some previous studies made by Yan and Li [45], who reported that students’ foreign language performance was greatly affected by teachers and the language environment. Thang et al. [46] also found that teachers’ influence was one of the most recognized factors leading to successful learning.

However, the mean score of *Luck* is only 2.39, lower than 3.00, which suggests that most of the Japanese language learners seldom ascribe their success to luck in Japanese reading comprehension. This finding is much corresponding to Genç’s[22] belief that “students perceiving themselves as lucky or unlucky might have changing mood during their studies”, which may not be conducive to their language learning.

To sum up, the Japanese major junior students in this research are most likely to ascribe their success in reading comprehension to *Effort* (Mean=3.83), *Ability* (Mean=3.71), *Task Difficulty* (Mean=3.71), *Teacher's Help* (Mean=3.65) and so on, while they are least likely to ascribe their success to *luck*, which is the external, uncontrollable and unstable factor. The empirical results indicate that the Japanese major junior students hold a positive success attribution perception on the whole, demonstrating that these students have already formed some good learning habits and strong language learning ability.

4.2 Differences between high achievers and low achievers regarding success attribution factors in Japanese reading comprehension performance

According to the Japanese language learners’ NSS-4 scores, the top 1/4 participants (40 students) were selected as high achievers and the bottom 1/4 participants (40 students) were chosen as low achievers. An independent-samples T-test was employed to analyze the difference between the two groups regarding success attribution factors in Japanese reading comprehension performance.(see **Table 3**)

Table 3 Independent-samples t-test of Success Attribution Factors between High and Low Achievers

Categories	High Achievers		Low Achievers		T	P
	Mean	Standard Deviation	Mean	Standard Deviation		
Internal Factors	3.82	.92	3.15	1.00	2.422	.005
Ability	3.95	.79	3.21	1.01	1.768	.002
Effort	4.01	.80	3.23	.95	3.777	.000
Mood	3.50	1.17	3.01	1.04	1.721	.012
External Factors	3.29	1.10	3.03	1.12	2.520	.017
Luck	2.30	1.23	2.78	1.18	-1.435	.155
Task difficulty	3.85	.82	3.03	1.14	4.033	.021
Teacher's help	3.79	1.17	3.41	1.03	1.097	.276
Learning environment	3.22	1.19	2.90	1.12	1.262	.211

As shown in **Table 3**, higher achievers get higher mean scores than the low achievers concerning two broad categories of success attribution factors (*Internal Factors* and *External Factors*). And the p value is

lower than .05, suggesting significant differences existing between the two groups in terms of success attribution factors.

Within the category of **Internal Factors**, significant differences exist between the two groups in all three specific factors (*Ability, Effort and Mood*), with the mean scores of high achievers much higher than low achievers and the p value below .05 ($p < .05$). This finding is much corresponding to some other research findings^[47, 7] that successful language learners always ascribe their learning success to *ability* and *effort*, which belong to internal factors.

Firstly, in terms of *Ability* factor, the mean score for high achievers is 3.95 and the mean score for low achievers is 3.21, with the p value .002, lower than .05, implying a significant discrepancy between the two groups of learners. This finding corroborates Weiner's finding^[8], who claimed that "high-achievers for any given task are more likely to cite ability and effort attributions for their success."

The second factor is *Effort*. The mean score for high achievers is 4.01 and the mean score for low achievers is 3.23, with p value lower than .000, suggesting a significant discrepancy existing between high achievers and low achievers. In the interview, when asked the high achievers whether they would do some additional reading comprehension exercises after class, **all the five high-level students** gave the positive answer, while only one low-level student said that he would do some extracurricular reading comprehension exercises, which indicates the importance of making efforts in foreign language learning academic achievement. According to Weiner's Attribution Theory^[32], students who make internal attributions to factors such as *Effort* are more likely to enhance their learning motivation, which in turn may motivate their learning success.

The third factor is *Mood* factor. The mean score for high achievers is 3.50 and the mean score for low achievers is 3.01, with p value lower than .050, also demonstrating a significant discrepancy existing between high and low achievers.

The above findings suggest that high-level students are more inclined to ascribe their learning success in reading comprehension to *Ability, Effort, Mood* than low achievers. Just as one high achiever mentioned in the interview that, "As long as I can make efforts, I think I will gradually improve my abilities in Japanese language learning and do well in reading comprehension tasks. Moreover, I can always keep myself in a good mental state when I'm involved in reading comprehension exercises."

In terms of **External Factors**, a significant discrepancy exists between high and low achievers in only one factor, that is *Task Difficulty*, with high achievers' mean score (Mean=3.85) higher than that of low achiever (Mean=3.03) and the p value below 0.5 ($p < .05$), which indicates that *Task Difficulty* can really decide one's success in Japanese language learning. This result is proved from the interview by one high achiever, "I think that the task difficulty of Japanese reading comprehension exercises has a great deal to do with my final score."

Regarding the other three specific factors (*Luck, Teacher's help, Learning environment*) of External Category, no significant discrepancy has been found, as the p values are all higher than .05. However, in terms of *Teacher's help* and *Learning environment*, the mean scores for high achievers are higher than low achievers, which means that high achievers believe that their success in reading comprehension results more from *Teacher's help* and *Learning environment* than low achievers. This finding is much in agreement with Gobel and Mori's research^[29], which reveals that high achievers depend more on teachers for their learning success than low achievers.

Among all the *External Factors*, *Luck* is the only factor with the mean scores of both groups being lower than 3.00, which indicates that neither high-level students (Mean=2.30) nor low-level students (Mean=2.78) think much importance of *Luck* factor in their success attribution factors of reading comprehension performance. Moreover, the mean score of low achievers is a little bit higher than that of high achievers, which indicates that the low achievers may sometimes think that the success of Japanese reading comprehension depends a little bit on *Luck*.

From the above results, it can be concluded that high achievers are more liable to ascribe their learning success in reading comprehension to some internal elements than low achievers, which means that, from the perspective of success attribution, Japanese major junior students with higher reading comprehension level are more likely to make internal attribution than those with lower reading comprehension level. This finding corroborates Weiner's Attribution Theory (2019), which mentioned that successful learners are more inclined to make internal attributions to success while unsuccessful learners make external attributions. The above results also confirmed the results revealed in other academic research papers [20, 29, 46, 48], which disclosed the significant function of combining both internal and external factors in the successful learning by high achievers. Therefore, during the process of foreign language teaching, Japanese language teachers should pay more attention to students with poor reading comprehension performance, and make efforts of guiding these students to maintain more positive attribution beliefs.

5. Conclusion

Based on the analysis of quantitative and qualitative data and reviewing relevant literature, **the major findings** are as follows:

Firstly, the Japanese major junior students have a positive attribution style on the whole, with the mean value of *Internal Factors* (Mean=3.68) higher than that of *External Factors* (Mean=3.23). Among the three subcategories of *Internal Factors*, the mean score for *Effort* (Mean=3.83) ranks the highest, followed by *Ability* (Mean=3.71) and *Mood* (Mean=3.49). In terms of *External Factors*, except *Luck* (Mean=2.39), the mean scores for the other three factors are all above 3.00, with *Task difficulty* reaching 3.71, followed by *Teacher's help* (Mean=3.65) and *Learning environment* (Mean=3.16).

Secondly, there do exist some differences between high achievers and low achievers with regard to success attribution factors in Japanese reading comprehension performance. High achievers get higher mean scores than low achievers in both *Internal* and *External Factors*, with the p values lower than .05. Within the category of *Internal Factors*, significant differences exist between the two groups in all three specific factors (*Ability*, *Effort* and *Mood*), with the mean scores of high-level students higher than that of low-level students ($p < .05$). With regard to *External Factors*, a significant discrepancy is disclosed between the two groups in only one factor (*Task Difficulty*), with the mean score of high achievers 3.85 and that of low achievers 3.03 ($p < .05$).

In conclusion, this empirical study delves deeply into Japanese Major Junior students' success attribution factors in reading comprehension performance, offering valuable insights for Japanese language educational practices. Future researches could explore some other factors affecting Japanese language learners' reading comprehension performance, such as motivation, learning strategies and so on. Moreover, a larger sample across grade levels with different sexes and backgrounds and individual characteristics would be taken into account in the future research, which may provide more in-depth perspective and illumination, and obtain more fruitful results within different contexts and various educational administrations.

6. Pedagogical implications

This study **makes some pedagogical implications** for both teachers and students. **Firstly**, the majority of students tend to ascribe their success in reading comprehension to some internal elements, especially to *Effort* and *Ability*, which help stimulate their learning motivation. Such attribution beliefs need to be maintained. Moreover, students with different reading comprehension levels have different success attribution tendencies in reading comprehension performance. Therefore, high-level students, who think that their success in reading comprehension mostly results from *Ability*, should make unremitting efforts to improve their learning abilities. While for some low-level students who sometimes ascribe their success in reading comprehension to *luck*, they should adjust their mentality and make more positive attributions, especially to internal factors, such as attributing their success in reading comprehension to their own abilities and making greater efforts in Japanese language learning. **Secondly**, in terms of Japanese language teachers, they should first have a deep understanding of students' self-attribution beliefs, which is a good beginning to improve the teaching effectiveness. According to the research findings, it is found that the Japanese major junior students' overall success attribution of reading comprehension achievement generally presents a positive trend. Therefore, Japanese language teachers should encourage the students to make self-reflection on their reading comprehension learning in their daily teaching, and guide the students to credit their success to *Effort* and *Ability* instead of *luck*. In the long run, based on good attribution psychology mental state, students can not only maintain their own positive attribution tendency, but also continuously enhance their learning motivation, which in turn results in their great efforts in language learning and thus achieve good language performance. Just as Jia-ling^[49] claims that "L2 performance also had a significant direct effect on causal attributions, which, in turn, had a significant effect on reading motivations." To be specific, teachers should gradually guide students to self-evaluate their learning effect of reading comprehension, and make students set proper goals in their actual reading practice and tests. Meanwhile, teachers should take different measures to promote the progress of all students, especially for students with poor reading comprehension performance by continuously giving them positive feedback and encouragement, so that these students can maintain persistent motivation and keep a sense of achievement in reading comprehension section. **Thirdly**, since the individual's attribution is formed in the interaction between the individual and living environment, it can be changed in a certain living situation. Some problems caused by the attribution formed in the classroom can be changed and solved by changing the interaction between teachers and students in the classroom. That is to say, the improper attribution beliefs of Japanese major students in terms of reading comprehension performance can be gradually rectified through the efforts by both teachers and students. The results of this study disclose that Japanese major students still have some problems with their own attribution beliefs of academic achievement of reading comprehension. Appropriate and positive attribution beliefs are essential to improving students' Japanese reading comprehension performance.

To sum up, this survey study on Japanese Major Junior students' success attribution factors in reading comprehension performance has greatly enhanced our understanding of Japanese language learners' success attribution beliefs, which may serve as a significant guidance for both teachers and students during the process of teaching and learning Japanese language, thus providing crucial insights for educators and decision-makers.

Author Contributions

Fengdan Shen: Conceptualization, Spss calculation and analysis, Writing—original, Draft preparation, Writing—review and editing

Lingyi Zhou: Initial idea discussion, Analysis of the data, Draft of the manuscript.

Yufang Feng: Conceptualization, methodology, Data analysis and collection, Spss calculation and analysis

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Appendix I Questionnaire

A Survey on Japanese Major Students' Success Attribution Factors of Reading Comprehension Performance

Dear students,

Hello! Thank you very much for taking your precious time to fill in the questionnaire. This questionnaire intends to discover the correlation between your success attribution and your academic performance of reading comprehension, with the purpose of improving teachers' instruction through the investigation. The analysis and results of this questionnaire are for research purposes only and will not affect your academic results. Please decide your choice according to your actual situation. Thank you for your cooperation!

1) Demographic information:

Name: _____ University: _____ Department: _____

Major: _____ Grade: _____ Class: _____

2) Success Attribution of Reading Comprehension Performance

The following items are about success attribution factors concerning Japanese reading comprehension performance. Please tick the number following each description according to your actual situation.

5=Completely agree

4= Agree

3=Uncertain

2=Disagree

1=Completely disagree

Number	Items					
1	I think that if I make efforts, I can overcome any obstacles in the way of improving my Japanese reading comprehension ability. (<i>Effort</i>)	5	4	3	2	1
2	I think that the most important element for me to get a high score in Japanese reading comprehension is my strong reading ability. (<i>Ability</i>)	5	4	3	2	1
3	I think that my high score in Japanese reading comprehension largely depends on my luck. For example, the reading comprehension questions in the exam are almost the same as what I did before. (<i>Luck</i>)	5	4	3	2	1
4	I think that my high score in Japanese reading comprehension is mainly because of the low difficulty level of some reading comprehension exercises. (<i>Task difficulty</i>)	5	4	3	2	1

Number	Items					
5	I think that my high score in Japanese reading comprehension in the exam has a lot to do with the environment in which I took the exam. (<i>Learning environment</i>)	5	4	3	2	1
6	I think that my high score in Japanese reading comprehension is closely related to the high demand from my Japanese language teacher. (<i>Teacher's help</i>)	5	4	3	2	1
7	I think that my high score in Japanese reading comprehension is due to my peaceful mind. I'm confident and relaxed while finishing reading comprehension exercises. (<i>Mood</i>)	5	4	3	2	1
8	I think that my high score in Japanese reading comprehension is due to my own efforts. (<i>Effort</i>)	5	4	3	2	1
9	I think that my high score in Japanese reading comprehension is due to the hunch I have for the correct answer. (<i>Luck</i>)	5	4	3	2	1
10	I think that I do well in Japanese reading comprehension is due to the quiet learning environment, such as in a quiet classroom. (<i>Learning environment</i>)	5	4	3	2	1
11	I think that my high score in Japanese reading comprehension is due to my comprehensive Japanese language ability. (<i>Ability</i>)	5	4	3	2	1
12	I think that my high score in Japanese reading comprehension is mainly because of the good mental state and the clear mind I have when doing reading comprehension. (<i>Mood</i>)	5	4	3	2	1
13	I think that my high score in Japanese reading comprehension is mainly because of the reading skills taught by the teacher when doing the reading comprehension tasks. (<i>Teacher's help</i>)	5	4	3	2	1
14	I think that I do well in Japanese reading comprehension is because of the peaceful environment in which I am involved in intensive time-limited exercises, rather than doing while playing. (<i>Learning environment</i>)	5	4	3	2	1
15	I think my high score in Japanese reading comprehension is all because of my learning efforts. (<i>Effort</i>)	5	4	3	2	1
16	I think that my high score in Japanese reading comprehension depends a little bit on my luck on the tests. (<i>Luck</i>)	5	4	3	2	1
17	I think that my high score in Japanese reading comprehension directly reflects my strong reading comprehension ability. (<i>Ability</i>)	5	4	3	2	1
18	I think that teachers' comment and analysis of the reading comprehension exercises are of great help to my high score in reading comprehension. (<i>Teacher's help</i>)	5	4	3	2	1
19	I think that my high score in Japanese reading comprehension is mainly due to my better state of both mind and body. (<i>Mood</i>)	5	4	3	2	1
20	I think that the difficulty level of Japanese reading comprehension has a great deal to do with my score in reading comprehension. (<i>Task difficulty</i>)	5	4	3	2	1

THREE TABLES

Table 1 Reliability Analysis of the Questionnaire

Categories		Items	Alpha
Internal Factors	Ability	2, 11, 17	.538
	Effort	1, 8, 15	.761
	Mood	7, 12, 19	.629
External Factors	Luck	3, 9, 16	.604
	Task difficulty	4, 20	.561
	Teacher's help	6, 13, 18	.701
	Learning environment	5, 10, 14	.563

Table 2 Descriptive Statistics of Japanese Major Students' Success Attribution Factors in Reading Comprehension

Categories	Number	Mean	Standard Deviation
Internal Factors	160	3.68	.91
Ability	160	3.71	.83
Effort	160	3.83	.85
Mood	160	3.49	1.04
External Factors	160	3.23	1.06
Luck	160	2.39	1.20
Task difficulty	160	3.71	1.12
Teacher's help	160	3.65	1.15
Learning environment	160	3.16	.75

Table 3 Independent-samples t-test of Success Attribution Factors between High and Low Achievers

Categories	High Achievers		Low Achievers		T	P
	Mean	Standard Deviation	Mean	Standard Deviation		
Internal Factors	3.82	.92	3.15	1.00	2.422	.005
Ability	3.95	.79	3.21	1.01	1.768	.002
Effort	4.01	.80	3.23	.95	3.777	.000
Mood	3.50	1.17	3.01	1.04	1.721	.012
External Factors	3.29	1.10	3.03	1.12	2.520	.017
Luck	2.30	1.23	2.78	1.18	-1.435	.155
Task difficulty	3.85	.82	3.03	1.14	4.033	.021
Teacher's help	3.79	1.17	3.41	1.03	1.097	.276
Learning environment	3.22	1.19	2.90	1.12	1.262	.211